

# SEQUENCE LISTING

<110> Bristol-Myers Squibb Company

<120> A NOVEL HUMAN G-PROTEIN COUPLED RECEPTOR, HGPRBMY8, EXPRESSED HIGHLY IN BRAIN

<130> D0047A-CIP

<150> U.S. 09/992,238  
<151> 2001-11-14

<150> U.S. 60/248,285  
<151> 2000-11-14

<150> U.S. 60/268,581  
<151> 2001-02-14

<150> U.S. 60/308,285  
<151> 2001-07-27

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<151> 2001-09-04

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<170> PatentIn version 3.2

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Ile	Arg	Ser	Thr	Val	Leu	Val	Ile	Phe	Leu	Ala	Ala	Ser	Phe	Val	Gly
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Asn	Ile	Val	Leu	Ala	Leu	Val	Leu	Gln	Arg	Lys	Pro	Gln	Leu	Leu	Gln
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Val	Thr	Asn	Arg	Phe	Ile	Phe	Asn	Leu	Leu	Val	Thr	Asp	Leu	Leu	Gln
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Ile Ser Leu Val Ala Pro Trp Val Val Ala Thr Ser Val Pro Leu Phe  
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Trp Pro Leu Asn Ser His Phe Cys Thr Ala Leu Val Ser Leu Thr His  
 100 105 110

Leu Phe Ala Phe Ala Ser Val Asn Thr Ile Val Leu Val Ser Val Asp  
 115 120 125

Arg Tyr Leu Ser Ile Ile His Pro Leu Ser Tyr Pro Ser Lys Met Thr  
 130 135 140

Gln Arg Arg Gly Tyr Leu Leu Leu Tyr Gly Thr Trp Ile Val Ala Ile  
 145 150 155 160

Leu Gln Ser Thr Pro Pro Leu Tyr Gly Trp Gly Gln Ala Ala Phe Asp  
 165 170 175

Glu Arg Asn Ala Leu Cys Ser Met Ile Trp Gly Ala Ser Pro Ser Tyr  
 180 185 190

Thr Ile Leu Ser Val Val Ser Phe Ile Val Ile Pro Leu Ile Val Met  
 195 200 205

Ile Ala Cys Tyr Ser Val Val Phe Cys Ala Ala Arg Arg Gln His Ala  
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Leu Leu Tyr Asn Val Lys Arg His Ser Leu Glu Val Arg Val Lys Asp  
 225 230 235 240

Cys Val Glu Asn Glu Asp Glu Glu Gly Ala Glu Lys Lys Glu Glu Phe  
 245 250 255

Gln Asp Glu Ser Glu Phe Arg Arg Gln His Glu Gly Glu Val Lys Ala  
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Lys Glu Gly Arg Met Glu Ala Lys Asp Gly Ser Leu Lys Ala Lys Glu  
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Gly Ser Thr Gly Thr Ser Glu Ser Ser Val Glu Ala Arg Gly Ser Glu  
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Glu Val Arg Glu Ser Ser Thr Val Ala Ser Asp Gly Ser Met Glu Gly

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Ala	Val	Asn	Ile	Pro	Glu	Ser	Leu	Pro	Pro	Ser	Arg	Arg	Asn	Ser	Asn
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Ile	Phe	Ile	Ile	Ile	Phe	Ser	Tyr	Val	Leu	Ser	Leu	Gly	Pro	Tyr	Cys
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Phe	Leu	Ala	Val	Leu	Ala	Val	Trp	Val	Asp	Val	Glu	Thr	Gln	Val	Pro
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Gln	Trp	Val	Ile	Thr	Ile	Ile	Ile	Trp	Leu	Phe	Phe	Leu	Gln	Cys	Cys
		435					440					445			
Ile	His	Pro	Tyr	Val	Tyr	Gly	Tyr	Met	His	Lys	Thr	Ile	Lys	Lys	Glu
	450					455					460				
Ile	Gln	Asp	Met	Leu	Lys	Lys	Phe	Phe	Cys	Lys	Glu	Lys	Pro	Pro	Lys
465					470					475					480
Glu	Asp	Ser	His	Pro	Asp	Leu	Pro	Gly	Thr	Glu	Gly	Gly	Thr	Glu	Gly
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Lys	Ile	Val	Pro	Ser	Tyr	Asp	Ser	Ala	Thr	Phe	Pro				
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<210> 7  
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Pro Pro Thr Asn Tyr Lys Thr Val Glu Leu Val Phe Ile Ala Thr Val  
35 40 45

Thr Gly Ser Leu Ser Leu Val Thr Val Val Gly Asn Ile Leu Val Met  
50 55 60

Leu Ser Ile Lys Val Asn Arg Gln Leu Gln Thr Val Asn Asn Tyr Phe  
65 70 75 80

Leu Phe Ser Leu Ala Cys Ala Asp Leu Ile Ile Gly Val Phe Ser Met  
85 90 95

Asn Leu Tyr Thr Val Tyr Ile Ile Lys Gly Tyr Trp Pro Leu Gly Ala  
100 105 110

Val Val Cys Asp Leu Trp Leu Ala Leu Asp Tyr Val Val Ser Asn Ala  
115 120 125

Ser Val Met Asn Leu Leu Ile Ile Ser Phe Asp Arg Tyr Phe Cys Val  
130 135 140

Thr Lys Pro Leu Thr Tyr Pro Ala Arg Arg Thr Thr Lys Met Ala Gly  
145 150 155 160

Leu Met Ile Ala Ala Ala Trp Ile Leu Ser Phe Ile Leu Trp Ala Pro  
165 170 175

Ala Ile Leu Phe Trp Gln Phe Ile Val Gly Lys Arg Thr Val His Glu  
180 185 190

Arg Glu Cys Tyr Ile Gln Phe Leu Ser Asn Pro Ala Val Thr Phe Gly  
195 200 205

Thr Ala Ile Ala Ala Phe Tyr Leu Pro Val Val Ile Met Thr Val Leu  
210 215 220

Tyr Ile His Ile Ser Leu Ala Ser Arg Ser Arg Val Arg Arg His Lys  
225 230 235 240

Pro Glu Ser Arg Lys Glu Arg Lys Gly Lys Ser Leu Ser Phe Phe Lys  
245 250 255

Ala Pro Pro Val Lys Gln Asn Asn Asn Asn Ser Pro Lys Arg Ala Val  
260 265 270

Glu Val Lys Glu Glu Val Arg Asn Gly Lys Val Asp Asp Gln Pro Ser  
275 280 285

Ala Gln Thr Glu Ala Thr Gly Gln Gln Glu Glu Lys Glu Thr Ser Asn  
290 295 300

Glu Ser Ser Thr Val Ser Met Thr Gln Thr Thr Lys Asp Lys Pro Thr

305                      310                      315                      320

Thr Glu Ile Leu Pro Ala Gly Gln Gly Gln Ser Pro Ala His Pro Arg  
325 330 335

Val Asn Pro Thr Ser Lys Trp Ser Lys Ile Lys Ile Val Thr Lys Gln  
340 345 350

Thr Gly Thr Glu Ser Val Thr Ala Ile Glu Ile Val Pro Ala Lys Ala  
355 360 365

Gly Ala Ser Asp His Asn Ser Leu Ser Asn Ser Arg Pro Ala Asn Val  
370 375 380

Ala Arg Lys Phe Ala Ser Ile Ala Arg Ser Gln Val Arg Lys Lys Arg  
385 390 395 400

Gln Met Ala Ala Arg Glu Lys Lys Val Thr Arg Thr Ile Phe Ala Ile  
405 410 415

Leu Leu Ala Phe Ile Leu Thr Trp Thr Pro Tyr Asn Val Met Val Leu  
420 425 430

Ile Asn Thr Phe Cys Glu Thr Cys Val Pro Glu Thr Val Trp Ser Ile  
435 440 445

Gly Tyr Trp Leu Cys Tyr Val Asn Ser Thr Ile Asn Pro Ala Cys Tyr  
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Ala Leu Cys Asn Ala Thr Phe Lys Lys Thr Phe Lys His Leu Leu Met  
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Cys Gln Tyr Arg Asn Ile Gly Thr Ala Arg  
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Ile Arg Asn Gln Tyr His Gln His Glu Thr Ile Gln Ile Leu Lys Gly  
 35 40 45

Ser Ala Leu Phe Leu Leu Val Leu Trp Thr Ile Phe Ala Asn Ser Leu  
 50 55 60

Val Phe Ile Val Leu Tyr Lys Asn Pro Arg Leu Gln Thr Val Pro Asn  
 65 70 75 80

Leu Leu Val Gly Asn Leu Ala Phe Ser Asp Leu Ala Leu Gly Leu Ile  
 85 90 95

Val Leu Pro Leu Ser Ser Val Tyr Ala Ile Ala Gly Glu Trp Val Phe  
 100 105 110

Pro Asp Ala Leu Cys Glu Val Phe Val Ser Ala Asp Ile Leu Cys Ser  
 115 120 125

Thr Ala Ser Ile Trp Asn Leu Ser Ile Val Gly Leu Asp Arg Tyr Trp  
 130 135 140

Ala Ile Thr Ser Pro Val Ala Tyr Met Ser Lys Arg Asn Lys Arg Thr  
 145 150 155 160

Ala Gly Ile Met Ile Leu Ser Val Trp Ile Ser Ser Ala Leu Ile Ser  
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Leu Ala Pro Leu Leu Gly Trp Lys Gln Thr Ala Gln Thr Pro Asn Leu  
 180 185 190

Ile Tyr Glu Lys Asn Asn Thr Val Arg Gln Cys Thr Phe Leu Asp Leu  
 195 200 205

Pro Ser Tyr Thr Val Tyr Ser Ala Thr Gly Ser Phe Phe Ile Pro Thr  
 210 215 220

Leu Leu Met Phe Phe Val Tyr Phe Lys Ile Tyr Gln Ala Phe Ala Lys  
 225 230 235 240



His Arg Ala Arg Gln Ile Tyr Arg Gln Lys Val Ile Arg Lys His Ile  
 245 250 255

Glu Ser Thr Ile Leu His Glu Ile Ser His Val Leu Pro Thr Ser Asp  
 260 265 270

Glu Phe Ala Lys Glu Glu Glu Glu Glu Glu Asp Ser Glu Ser Ser Gly  
 275 280 285

Gln Val Glu Asn Gly Leu Gly Asn Gly Asn Asp Ala Ile Ile Glu Glu  
 290 295 300

Asp Glu Cys Glu Asp Glu Asp Ser Asp Glu Lys Arg Asp Asp His Thr  
 305 310 315 320

Ser Met Thr Thr Val Thr Ala Thr Val Thr Gly Pro Thr Glu Ala Pro  
 325 330 335

Tyr Met Lys Arg Glu Ala Lys Ile Ser Lys Ser Val Pro Ile Glu Lys  
 340 345 350

Glu Ser Ala Ile Gln Lys Arg Glu Ala Lys Pro Met Arg Ser Val Met  
 355 360 365

Ala Ile Ser Tyr Glu Lys Val Lys Arg His Lys Asn Arg Lys Glu Arg  
 370 375 380

Ile Tyr Arg Lys Ser Leu Gln Arg Lys Pro Lys Ala Ile Ser Ala Ala  
 385 390 395 400

Lys Glu Arg Arg Gly Val Lys Val Leu Gly Ile Ile Leu Gly Cys Phe  
 405 410 415

Thr Val Cys Trp Ala Pro Phe Phe Thr Met Tyr Val Leu Val Gln Phe  
 420 425 430

Cys Lys Asp Cys Ser Pro Asn Ala His Ile Glu Met Phe Ile Thr Trp  
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Leu Gly Tyr Ser Asn Ser Ala Met Asn Pro Ile Ile Tyr Thr Val Phe  
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Asn Arg Asp Tyr Gln Ile Ala Leu Lys Arg Leu Phe Thr Ser Glu Lys

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Lys Pro Ser Ser Thr Ser Arg Val  
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Gly Ser Gly Ser Leu Pro Asp Pro Glu Leu Ser Tyr Gln Ile Ile Thr  
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Ser Leu Phe Leu Gly Ala Leu Ile Leu Cys Ser Ile Phe Gly Asn Ser  
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Cys Val Val Ala Ala Ile Ala Leu Glu Arg Ser Leu Gln Asn Val Ala  
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Asn Tyr Leu Ile Gly Ser Leu Ala Val Thr Asp Leu Met Val Ser Val  
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Leu Val Leu Pro Met Ala Ala Leu Tyr Gln Val Leu Asn Lys Trp Thr  
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Leu Gly Gln Asp Ile Cys Asp Leu Phe Ile Ala Leu Asp Val Leu Cys  
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Cys Thr Ser Ser Ile Leu His Leu Cys Ala Ile Ala Leu Asp Arg Tyr  
130                                      135                                      140

Trp Ala Ile Thr Asp Pro Ile Asp Tyr Val Asn Lys Arg Thr Pro Arg  
145                                      150                                      155                                      160

Arg Ala Ala Val Leu Ile Ser Val Thr Trp Leu Ile Gly Phe Ser Ile  
165                                      170                                      175

Ser Ile Pro Pro Met Leu Gly Trp Arg Ser Ala Glu Asp Arg Ala Asn  
 180 185 190

Pro Asp Ala Cys Ile Ile Ser Gln Asp Pro Gly Tyr Thr Ile Tyr Ser  
 195 200 205

Thr Phe Gly Ala Phe Tyr Ile Pro Leu Ile Leu Met Leu Val Leu Tyr  
 210 215 220

Gly Arg Ile Phe Lys Ala Ala Arg Phe Arg Ile Arg Lys Thr Val Lys  
 225 230 235 240

Lys Thr Glu Lys Ala Lys Ala Ser Asp Met Cys Leu Thr Leu Ser Pro  
 245 250 255

Ala Val Phe His Lys Arg Ala Asn Gly Asp Ala Val Ser Ala Glu Trp  
 260 265 270

Lys Arg Gly Tyr Lys Phe Lys Pro Ser Ser Pro Cys Ala Asn Gly Ala  
 275 280 285

Val Arg His Gly Glu Glu Met Glu Ser Leu Glu Ile Ile Glu Val Asn  
 290 295 300

Ser Asn Ser Lys Thr His Leu Pro Leu Pro Asn Thr Pro Gln Ser Ser  
 305 310 315 320

Ser His Glu Asn Ile Asn Glu Lys Thr Thr Gly Thr Arg Arg Lys Ile  
 325 330 335

Ala Leu Ala Arg Glu Arg Lys Thr Val Lys Thr Leu Gly Ile Ile Met  
 340 345 350

Gly Thr Phe Ile Phe Cys Trp Leu Pro Phe Phe Ile Val Ala Leu Val  
 355 360 365

Leu Pro Phe Cys Ala Glu Asn Cys Tyr Met Pro Glu Trp Leu Gly Ala  
 370 375 380

Val Ile Asn Trp Leu Gly Tyr Ser Asn Ser Leu Leu Asn Pro Ile Ile  
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Tyr Ala Tyr Phe Asn Lys Asp Phe Gln Ser Ala Phe Lys Lys Ile Leu  
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Arg Cys Lys Phe His Arg His  
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Glu Pro Phe Gly Thr Gly Gly Asn Asp Thr Gly Leu Ser Asn Val Thr  
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Phe Ser Tyr Gln Val Ile Thr Ser Leu Leu Leu Gly Thr Leu Ile Phe  
35 40 45

Cys Ala Val Leu Gly Asn Ala Cys Val Val Ala Ala Ile Ala Leu Glu  
50 55 60

Arg Ser Leu Gln Asn Val Ala Asn Tyr Leu Ile Gly Ser Leu Ala Val  
65 70 75 80

Thr Asp Leu Met Val Ser Val Leu Val Leu Pro Met Ala Ala Leu Tyr  
85 90 95

Gln Val Leu Asn Lys Trp Thr Leu Gly Gln Val Thr Cys Asp Leu Phe  
100 105 110

Ile Ala Leu Asp Val Leu Cys Cys Thr Ser Ser Ile Leu His Leu Cys  
115 120 125

Ala Ile Ala Leu Asp Arg Tyr Trp Ala Ile Thr Asp Pro Ile Asp Tyr  
130 135 140

Val Asn Lys Arg Thr Pro Arg Arg Ala Ala Ala Leu Ile Ser Leu Thr  
145 150 155 160

Trp Leu Ile Gly Phe Leu Ile Ser Ile Pro Pro Met Leu Gly Trp Arg  
165 170 175

Ala Pro Glu Asp Arg Ser Asn Pro Asn Glu Cys Thr Ile Ser Lys Asp  
 180 185 190

His Gly Tyr Thr Ile Tyr Ser Thr Phe Gly Ala Phe Tyr Ile Pro Leu  
 195 200 205

Leu Leu Met Leu Val Leu Tyr Gly Arg Ile Phe Arg Ala Ala Arg Phe  
 210 215 220

Arg Ile Arg Lys Thr Val Lys Lys Val Glu Lys Lys Gly Ala Gly Thr  
 225 230 235 240

Ser Phe Gly Thr Ser Ser Ala Pro Pro Pro Lys Lys Ser Leu Asn Gly  
 245 250 255

Gln Pro Gly Ser Gly Asp Cys Arg Arg Ser Ala Glu Asn Arg Ala Val  
 260 265 270

Gly Thr Pro Cys Ala Asn Gly Ala Val Arg Gln Gly Glu Asp Asp Ala  
 275 280 285

Thr Leu Glu Val Ile Glu Val His Arg Val Gly Asn Ser Lys Gly Asp  
 290 295 300

Leu Pro Leu Pro Ser Glu Ser Gly Ala Thr Ser Tyr Val Pro Ala Cys  
 305 310 315 320

Leu Glu Arg Lys Asn Glu Arg Thr Ala Glu Ala Lys Arg Lys Met Ala  
 325 330 335

Leu Ala Arg Glu Arg Lys Thr Val Lys Thr Leu Gly Ile Ile Met Gly  
 340 345 350

Thr Phe Ile Leu Cys Trp Leu Pro Phe Phe Ile Val Ala Leu Val Leu  
 355 360 365

Pro Phe Cys Glu Ser Ser Cys His Met Pro Glu Leu Leu Gly Ala Ile  
 370 375 380

Ile Asn Trp Leu Gly Tyr Ser Asn Ser Leu Leu Asn Pro Val Ile Tyr  
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Ala Tyr Phe Asn Lys Asp Phe Gln Asn Ala Phe Lys Lys Ile Ile Lys  
405 410 415

Cys Lys Phe Cys Arg  
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35 40 45

Ser Leu Phe Leu Gly Ala Leu Ile Leu Cys Ser Ile Phe Gly Asn Ser  
50 55 60

Cys Val Val Ala Ala Ile Ala Leu Glu Arg Ser Leu Gln Asn Val Ala  
65 70 75 80

Asn Tyr Leu Ile Gly Ser Leu Ala Val Thr Asp Leu Met Val Ser Val  
85 90 95

Leu Val Leu Pro Met Ala Ala Leu Tyr Gln Val Leu Asn Lys Trp Thr  
100 105 110

Leu Gly Gln Asp Ile Cys Asp Leu Phe Ile Ala Leu Asp Val Leu Cys  
115 120 125

Cys Thr Ser Ser Ile Leu His Leu Cys Ala Ile Ala Leu Asp Arg Tyr  
130 135 140

Trp Ala Ile Thr Asp Pro Ile Asp Tyr Val Asn Lys Arg Thr Pro Arg  
145 150 155 160

Arg Ala Ala Val Leu Ile Ser Val Thr Trp Leu Ile Gly Phe Ser Ile

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Ser	Ile	Pro	Pro	Met	Leu	Gly	Trp	Arg	Ser	Ala	Glu	Asp	Arg	Ala	Asn				
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Pro	Asp	Ala	Cys	Ile	Ile	Ser	Gln	Asp	Pro	Gly	Tyr	Thr	Ile	Tyr	Ser				
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Thr	Phe	Gly	Ala	Phe	Tyr	Ile	Pro	Leu	Ile	Leu	Met	Leu	Val	Leu	Tyr				
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Gly	Arg	Ile	Phe	Lys	Ala	Ala	Arg	Phe	Arg	Ile	Arg	Lys	Thr	Val	Lys				
225					230					235					240				
Lys	Thr	Glu	Lys	Ala	Lys	Ala	Ser	Asp	Met	Cys	Leu	Thr	Leu	Ser	Pro				
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Ala	Val	Phe	His	Lys	Arg	Ala	Asn	Gly	Asp	Ala	Val	Ser	Ala	Glu	Trp				
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Lys	Arg	Gly	Tyr	Lys	Phe	Lys	Pro	Ser	Ser	Pro	Cys	Ala	Asn	Gly	Ala				
		275					280					285							
Val	Arg	His	Gly	Glu	Glu	Met	Glu	Ser	Leu	Glu	Ile	Ile	Glu	Val	Asn				
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Ser	Asn	Ser	Lys	Thr	His	Leu	Pro	Leu	Pro	Asn	Thr	Pro	Gln	Ser	Ser				
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Ala	Leu	Ala	Arg	Glu	Arg	Lys	Thr	Val	Lys	Thr	Leu	Gly	Ile	Ile	Met				
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Gly	Thr	Phe	Ile	Phe	Cys	Trp	Leu	Pro	Phe	Phe	Ile	Val	Ala	Leu	Val				
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Leu	Pro	Phe	Cys	Ala	Glu	Asn	Cys	Tyr	Met	Pro	Glu	Trp	Leu	Gly	Ala				
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Val	Ile	Asn	Trp	Leu	Gly	Tyr	Ser	Asn	Ser	Leu	Leu	Asn	Pro	Ile	Ile				
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Tyr Ala Tyr Phe Asn Lys Asp Phe Gln Ser Ala Phe Lys Lys Ile Leu  
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Arg Cys Lys Phe His Arg His  
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Met Ala Asn Phe Thr Phe Gly Asp Leu Ala Leu Asp Val Ala Arg Met  
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Thr Pro Gly Leu Ser Pro Thr Gly Leu Val Thr Ser Asp Phe Asn Asp  
35 40 45

Ser Tyr Gly Leu Thr Gly Gln Phe Ile Asn Gly Ser His Ser Ser Arg  
50 55 60

Ser Arg Asp Asn Ala Ser Ala Asn Asp Thr Ser Ala Thr Asn Met Thr  
65 70 75 80

Asp Asp Arg Tyr Trp Ser Leu Thr Val Tyr Ser His Glu His Leu Val  
85 90 95

Leu Thr Ser Val Ile Leu Gly Leu Phe Val Leu Cys Cys Ile Ile Gly  
100 105 110

Asn Cys Phe Val Ile Ala Ala Val Met Leu Glu Arg Ser Leu His Asn  
115 120 125

Val Ala Asn Tyr Leu Ile Leu Ser Leu Ala Val Ala Asp Leu Met Val  
130 135 140

Ala Val Leu Val Met Pro Leu Ser Val Val Ser Glu Ile Ser Lys Val  
145 150 155 160



Trp Phe Leu His Ser Glu Val Cys Asp Met Trp Ile Ser Val Asp Val  
 165 170 175

Leu Cys Cys Thr Ala Ser Ile Leu His Leu Val Ala Ile Ala Met Asp  
 180 185 190

Arg Tyr Trp Ala Val Thr Ser Ile Asp Tyr Ile Arg Arg Arg Ser Ala  
 195 200 205

Arg Arg Ile Leu Leu Met Ile Met Val Val Trp Ile Val Ala Leu Phe  
 210 215 220

Ile Ser Ile Pro Pro Leu Phe Gly Trp Arg Asp Pro Asn Asn Asp Pro  
 225 230 235 240

Asp Lys Thr Gly Thr Cys Ile Ile Ser Gln Asp Lys Gly Tyr Thr Ile  
 245 250 255

Phe Ser Thr Val Gly Ala Phe Tyr Leu Pro Met Leu Val Met Met Ile  
 260 265 270

Ile Tyr Ile Arg Ile Trp Leu Val Ala Arg Ser Arg Ile Arg Lys Asp  
 275 280 285

Lys Phe Gln Met Thr Lys Ala Arg Leu Lys Thr Glu Glu Thr Thr Leu  
 290 295 300

Val Ala Ser Pro Lys Thr Glu Tyr Ser Val Val Ser Asp Cys Asn Gly  
 305 310 315 320

Cys Asn Ser Pro Asp Ser Thr Thr Glu Lys Lys Lys Arg Arg Ala Pro  
 325 330 335

Phe Lys Ser Tyr Gly Cys Ser Pro Arg Pro Glu Arg Lys Lys Asn Arg  
 340 345 350

Ala Lys Lys Leu Pro Glu Asn Ala Asn Gly Val Asn Ser Asn Ser Ser  
 355 360 365

Ser Ser Glu Arg Leu Lys Gln Ile Gln Ile Glu Thr Ala Glu Ala Phe  
 370 375 380

Ala Asn Gly Cys Ala Glu Glu Ala Ser Ile Ala Met Leu Glu Arg Gln

385                      390                      395                      400  
 Cys Asn Asn Gly Lys Lys Ile Ser Ser Asn Asp Thr Pro Tyr Ser Arg  
                                  405                      410                      415  
 Thr Arg Glu Lys Leu Glu Leu Lys Arg Glu Arg Lys Ala Ala Arg Thr  
                                  420                      425                      430  
 Leu Ala Ile Ile Thr Gly Ala Phe Leu Ile Cys Trp Leu Pro Phe Phe  
                                  435                      440                      445  
 Ile Ile Ala Leu Ile Gly Pro Phe Val Asp Pro Glu Gly Ile Pro Pro  
                                  450                      455                      460  
 Phe Ala Arg Ser Phe Val Leu Trp Leu Gly Tyr Phe Asn Ser Leu Leu  
                                  465                      470                      475                      480  
 Asn Pro Ile Ile Tyr Thr Ile Phe Ser Pro Glu Phe Arg Ser Ala Phe  
                                  485                      490                      495  
 Gln Lys Ile Leu Phe Gly Lys Tyr Arg Arg Gly His Arg  
                                  500                      505  
  
 <210> 13  
 <211> 572  
 <212> PRT  
 <213> Homo sapiens  
  
 <400> 13  
 Met Thr Phe Arg Asp Leu Leu Ser Val Ser Phe Glu Gly Pro Arg Pro  
 1                      5                      10                      15  
  
 Asp Ser Ser Ala Gly Gly Ser Ser Ala Gly Gly Gly Gly Gly Ser Ala  
                                  20                      25                      30  
  
 Gly Gly Ala Ala Pro Ser Glu Gly Pro Ala Val Gly Gly Val Pro Gly  
                                  35                      40                      45  
  
 Gly Ala Gly Gly Gly Gly Gly Val Val Gly Ala Gly Ser Gly Glu Asp  
                                  50                      55                      60  
  
 Asn Arg Ser Ser Ala Gly Glu Pro Gly Ser Ala Gly Ala Gly Gly Asp  
 65                      70                      75                      80

Val Asn Gly Thr Ala Ala Val Gly Gly Leu Val Val Ser Ala Gln Gly  
 85 90 95

Val Gly Val Gly Val Phe Leu Ala Ala Phe Ile Leu Met Ala Val Ala  
 100 105 110

Gly Asn Leu Leu Val Ile Leu Ser Val Ala Cys Asn Arg His Leu Gln  
 115 120 125

Thr Val Thr Asn Tyr Phe Ile Val Asn Leu Ala Val Ala Asp Leu Leu  
 130 135 140

Leu Ser Ala Thr Val Leu Pro Phe Ser Ala Thr Met Glu Val Leu Gly  
 145 150 155 160

Phe Trp Ala Phe Gly Arg Ala Phe Cys Asp Val Trp Ala Ala Val Asp  
 165 170 175

Val Leu Cys Cys Thr Ala Ser Ile Leu Ser Leu Cys Thr Ile Ser Val  
 180 185 190

Asp Arg Tyr Val Gly Val Arg His Ser Leu Lys Tyr Pro Ala Ile Met  
 195 200 205

Thr Glu Arg Lys Ala Ala Ala Ile Leu Ala Leu Leu Trp Val Val Ala  
 210 215 220

Leu Val Val Ser Val Gly Pro Leu Leu Gly Trp Lys Glu Pro Val Pro  
 225 230 235 240

Pro Asp Glu Arg Phe Cys Gly Ile Thr Glu Glu Ala Gly Tyr Ala Val  
 245 250 255

Phe Ser Ser Val Cys Ser Phe Tyr Leu Pro Met Ala Val Ile Val Val  
 260 265 270

Met Tyr Cys Arg Val Tyr Val Val Ala Arg Ser Thr Thr Arg Ser Leu  
 275 280 285

Glu Ala Gly Val Lys Arg Glu Arg Gly Lys Ala Ser Glu Val Val Leu  
 290 295 300

Arg Ile His Cys Arg Gly Ala Ala Thr Gly Ala Asp Gly Ala His Gly  
 305 310 315 320

Met Arg Ser Ala Lys Gly His Thr Phe Arg Ser Ser Leu Ser Val Arg  
 325 330 335

Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys Thr Leu Ala Ile  
 340 345 350

Val Val Gly Val Phe Val Leu Cys Trp Phe Pro Phe Phe Phe Val Leu  
 355 360 365

Pro Leu Gly Ser Leu Phe Pro Gln Leu Lys Pro Ser Glu Gly Val Phe  
 370 375 380

Lys Val Ile Phe Trp Leu Gly Tyr Phe Asn Ser Cys Val Asn Pro Leu  
 385 390 395 400

Ile Tyr Pro Cys Ser Ser Arg Glu Phe Lys Arg Ala Phe Leu Arg Leu  
 405 410 415

Leu Arg Cys Gln Cys Arg Arg Arg Arg Arg Arg Arg Pro Leu Trp Arg  
 420 425 430

Val Tyr Gly His His Trp Arg Ala Ser Thr Ser Gly Leu Arg Gln Asp  
 435 440 445

Cys Ala Pro Ser Ser Gly Asp Ala Pro Pro Gly Ala Pro Leu Ala Leu  
 450 455 460

Thr Ala Leu Pro Asp Pro Asp Pro Glu Pro Pro Gly Thr Pro Glu Met  
 465 470 475 480

Gln Ala Pro Val Ala Ser Arg Arg Lys Pro Pro Ser Ala Phe Arg Glu  
 485 490 495

Trp Arg Leu Leu Gly Pro Phe Arg Arg Pro Thr Thr Gln Leu Arg Ala  
 500 505 510

Lys Val Ser Ser Leu Ser His Lys Ile Arg Ala Gly Gly Ala Gln Arg  
 515 520 525

Ala Glu Ala Ala Cys Ala Gln Arg Ser Glu Val Glu Ala Val Ser Leu

530                      535                      540  
 Gly Val Pro His Glu Val Ala Glu Gly Ala Thr Cys Gln Ala Tyr Glu  
 545                      550                      555                      560  
  
 Leu Ala Asp Tyr Ser Asn Leu Arg Glu Thr Asp Ile  
                     565                      570  
  
 <210> 14  
 <211> 562  
 <212> PRT  
 <213> Mus musculus  
  
 <400> 14  
  
 Met Thr Phe Arg Asp Ile Leu Ser Val Thr Phe Glu Gly Pro Arg Ala  
 1                      5                      10                      15  
  
 Ser Ser Ser Thr Gly Gly Ser Gly Ala Gly Gly Gly Ala Gly Thr Val  
                     20                      25                      30  
  
 Gly Pro Glu Gly Pro Ala Val Gly Gly Val Pro Gly Ala Thr Gly Gly  
                     35                      40                      45  
  
 Ser Ala Val Val Gly Thr Gly Ser Gly Glu Asp Asn Gln Ser Ser Thr  
                     50                      55                      60  
  
 Ala Glu Ala Gly Ala Ala Ala Ser Gly Glu Val Asn Gly Ser Ala Ala  
 65                      70                      75                      80  
  
 Val Gly Gly Leu Val Val Ser Ala Gln Gly Val Gly Val Gly Val Phe  
                     85                      90                      95  
  
 Leu Ala Ala Phe Ile Leu Thr Ala Val Ala Gly Asn Leu Leu Val Ile  
                     100                      105                      110  
  
 Leu Ser Val Ala Cys Asn Arg His Leu Gln Thr Val Thr Asn Tyr Phe  
                     115                      120                      125  
  
 Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Ser Ala Ala Val Leu  
                     130                      135                      140  
  
 Pro Phe Ser Ala Thr Met Glu Val Leu Gly Phe Trp Pro Phe Gly Arg  
 145                      150                      155                      160

Thr Phe Cys Asp Val Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala  
 165 170 175

Ser Ile Leu Ser Leu Cys Thr Ile Ser Val Asp Arg Tyr Val Gly Val  
 180 185 190

Arg His Ser Leu Lys Tyr Pro Ala Ile Met Thr Glu Arg Lys Ala Ala  
 195 200 205

Ala Ile Leu Ala Leu Leu Trp Ala Val Ala Leu Val Val Ser Val Gly  
 210 215 220

Pro Leu Leu Gly Trp Lys Glu Pro Val Pro Pro Asp Glu Arg Phe Cys  
 225 230 235 240

Gly Ile Thr Glu Glu Val Gly Tyr Ala Ile Phe Ser Ser Val Cys Ser  
 245 250 255

Phe Tyr Leu Pro Met Ala Val Ile Val Val Met Tyr Cys Arg Val Tyr  
 260 265 270

Val Val Ala Arg Ser Thr Thr Arg Ser Leu Glu Ala Gly Ile Lys Arg  
 275 280 285

Glu Pro Gly Lys Ala Ser Glu Val Val Leu Arg Ile His Cys Arg Gly  
 290 295 300

Ala Ala Thr Ser Ala Lys Gly Asn Pro Gly Thr Gln Ser Ser Lys Gly  
 305 310 315 320

His Thr Leu Arg Ser Ser Leu Ser Val Arg Leu Leu Lys Phe Ser Arg  
 325 330 335

Glu Lys Lys Ala Ala Lys Thr Leu Ala Ile Val Val Gly Val Phe Val  
 340 345 350

Leu Cys Trp Phe Pro Phe Phe Phe Val Leu Pro Leu Gly Ser Leu Phe  
 355 360 365

Pro Gln Leu Lys Pro Ser Glu Gly Val Phe Lys Val Ile Phe Trp Leu  
 370 375 380

Gly Tyr Phe Asn Ser Cys Val Asn Pro Leu Ile Tyr Pro Cys Ser Ser  
 385 390 395 400

Arg Glu Phe Lys Arg Ala Phe Leu Arg Leu Leu Arg Cys Gln Cys Arg  
 405 410 415

Arg Arg Arg Arg Arg Leu Trp Pro Ser Leu Arg Pro Pro Leu Ala Ser  
 420 425 430

Leu Asp Arg Arg Pro Ala Leu Arg Leu Cys Pro Gln Pro Ala His Arg  
 435 440 445

Thr Pro Arg Gly Ser Pro Ser Pro His Cys Thr Pro Arg Pro Gly Leu  
 450 455 460

Arg Arg His Ala Gly Gly Ala Gly Phe Gly Leu Arg Pro Ser Lys Ala  
 465 470 475 480

Ser Leu Arg Leu Arg Glu Trp Arg Leu Leu Gly Pro Leu Gln Arg Pro  
 485 490 495

Thr Thr Gln Leu Arg Ala Lys Val Ser Ser Leu Ser His Lys Phe Arg  
 500 505 510

Ser Gly Gly Ala Arg Arg Ala Glu Thr Ala Cys Ala Leu Arg Ser Glu  
 515 520 525

Val Glu Ala Val Ser Leu Asn Val Pro Gln Asp Gly Ala Glu Ala Val  
 530 535 540

Ile Cys Gln Ala Tyr Glu Pro Gly Asp Leu Ser Asn Leu Arg Glu Thr  
 545 550 555 560

Asp Ile

<210> 15  
 <211> 499  
 <212> PRT  
 <213> Homo sapiens

<400> 15

Met Val Phe Leu Ser Gly Asn Ala Ser Asp Ser Ser Asn Cys Thr Gln  
 1 5 10 15

Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile  
 20 25 30

Leu Gly Gly Leu Ile Leu Phe Gly Val Leu Gly Asn Ile Leu Val Ile  
 35 40 45

Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr  
 50 55 60

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu  
 65 70 75 80

Pro Phe Ser Ala Ile Phe Glu Val Leu Gly Tyr Trp Ala Phe Gly Arg  
 85 90 95

Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala  
 100 105 110

Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val  
 115 120 125

Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Arg Arg Gly Leu  
 130 135 140

Met Ala Leu Leu Cys Val Trp Ala Leu Ser Leu Val Ile Ser Ile Gly  
 145 150 155 160

Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Glu Asp Glu Thr Ile Cys  
 165 170 175

Gln Ile Asn Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser  
 180 185 190

Phe Tyr Leu Pro Leu Ala Ile Ile Leu Val Met Tyr Cys Arg Val Tyr  
 195 200 205

Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr  
 210 215 220

Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn  
 225 230 235 240



Ala Pro Ala Gly Gly Ser Gly Met Ala Ser Ala Lys Thr Lys Thr His  
 245 250 255

Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys  
 260 265 270

Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe  
 275 280 285

Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asp Phe Lys Pro Ser  
 290 295 300

Glu Thr Val Phe Lys Ile Val Phe Trp Leu Gly Tyr Leu Asn Ser Cys  
 305 310 315 320

Ile Asn Pro Ile Ile Tyr Pro Cys Ser Ser Gln Glu Phe Lys Lys Ala  
 325 330 335

Phe Gln Asn Val Leu Arg Ile Gln Cys Leu Arg Arg Lys Gln Ser Ser  
 340 345 350

Lys His Ala Leu Gly Tyr Thr Leu His Pro Pro Ser Gln Ala Val Glu  
 355 360 365

Gly Gln His Lys Asp Met Val Arg Ile Pro Val Gly Ser Arg Glu Thr  
 370 375 380

Phe Tyr Arg Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Phe Phe  
 385 390 395 400

Ser Ser Met Pro Arg Gly Ser Ala Arg Ile Thr Val Ser Lys Asp Gln  
 405 410 415

Ser Ser Cys Thr Thr Ala Arg Thr Lys Ser Arg Ser Val Thr Arg Leu  
 420 425 430

Glu Cys Ser Gly Met Ile Leu Ala His Cys Asn Leu Arg Leu Pro Gly  
 435 440 445

Ser Arg Asp Ser Pro Ala Ser Ala Ser Gln Ala Ala Gly Thr Thr Gly  
 450 455 460

Asp Val Pro Pro Gly Arg Arg His Gln Ala Gln Leu Ile Phe Val Phe  
 465 470 475 480

Leu Val Glu Thr Gly Phe His His Val Gly Gln Asp Asp Leu Asp Leu  
 485 490 495

Leu Thr Ser

<210> 16  
 <211> 429  
 <212> PRT  
 <213> Homo sapiens

<400> 16

Met Val Phe Leu Ser Gly Asn Ala Ser Asp Ser Ser Asn Cys Thr Gln  
 1 5 10 15

Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile  
 20 25 30

Leu Gly Gly Leu Ile Leu Phe Gly Val Leu Gly Asn Ile Leu Val Ile  
 35 40 45

Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr  
 50 55 60

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu  
 65 70 75 80

Pro Phe Ser Ala Ile Phe Glu Val Leu Gly Tyr Trp Ala Phe Gly Arg  
 85 90 95

Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala  
 100 105 110

Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val  
 115 120 125

Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Arg Arg Gly Leu  
 130 135 140

Met Ala Leu Leu Cys Val Trp Ala Leu Ser Leu Val Ile Ser Ile Gly  
 145 150 155 160

Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Glu Asp Glu Thr Ile Cys  
 165 170 175

Gln Ile Asn Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser  
 180 185 190

Phe Tyr Leu Pro Leu Ala Ile Ile Leu Val Met Tyr Cys Arg Val Tyr  
 195 200 205

Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr  
 210 215 220

Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn  
 225 230 235 240

Ala Pro Ala Gly Gly Ser Gly Met Ala Ser Ala Lys Thr Lys Thr His  
 245 250 255

Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys  
 260 265 270

Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe  
 275 280 285

Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asp Phe Lys Pro Ser  
 290 295 300

Glu Thr Val Phe Lys Ile Val Phe Trp Leu Gly Tyr Leu Asn Ser Cys  
 305 310 315 320

Ile Asn Pro Ile Ile Tyr Pro Cys Ser Ser Gln Glu Phe Lys Lys Ala  
 325 330 335

Phe Gln Asn Val Leu Arg Ile Gln Cys Leu Arg Arg Lys Gln Ser Ser  
 340 345 350

Lys His Ala Leu Gly Tyr Thr Leu His Pro Pro Ser Gln Ala Val Glu  
 355 360 365

Gly Gln His Lys Asp Met Val Arg Ile Pro Val Gly Ser Arg Glu Thr  
 370 375 380

Phe Tyr Arg Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Phe Phe  
 385 390 395 400

Ser Ser Met Pro Arg Gly Ser Ala Arg Ile Thr Val Ser Lys Asp Gln  
 405 410 415

Ser Ser Cys Thr Thr Ala Arg Gly His Thr Pro Met Thr  
 420 425

<210> 17  
 <211> 455  
 <212> PRT  
 <213> Homo sapiens

<400> 17

Met Val Phe Leu Ser Gly Asn Ala Ser Asp Ser Ser Asn Cys Thr Gln  
 1 5 10 15

Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile  
 20 25 30

Leu Gly Gly Leu Ile Leu Phe Gly Val Leu Gly Asn Ile Leu Val Ile  
 35 40 45

Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr  
 50 55 60

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu  
 65 70 75 80

Pro Phe Ser Ala Ile Phe Glu Val Leu Gly Tyr Trp Ala Phe Gly Arg  
 85 90 95

Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala  
 100 105 110

Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val  
 115 120 125

Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Arg Arg Gly Leu  
 130 135 140

Met Ala Leu Leu Cys Val Trp Ala Leu Ser Leu Val Ile Ser Ile Gly

145		150		155		160									
Pro	Leu	Phe	Gly	Trp	Arg	Gln	Pro	Ala	Pro	Glu	Asp	Glu	Thr	Ile	Cys
			165					170						175	
Gln	Ile	Asn	Glu	Glu	Pro	Gly	Tyr	Val	Leu	Phe	Ser	Ala	Leu	Gly	Ser
		180					185						190		
Phe	Tyr	Leu	Pro	Leu	Ala	Ile	Ile	Leu	Val	Met	Tyr	Cys	Arg	Val	Tyr
	195						200					205			
Val	Val	Ala	Lys	Arg	Glu	Ser	Arg	Gly	Leu	Lys	Ser	Gly	Leu	Lys	Thr
	210					215					220				
Asp	Lys	Ser	Asp	Ser	Glu	Gln	Val	Thr	Leu	Arg	Ile	His	Arg	Lys	Asn
225					230					235					240
Ala	Pro	Ala	Gly	Gly	Ser	Gly	Met	Ala	Ser	Ala	Lys	Thr	Lys	Thr	His
			245					250						255	
Phe	Ser	Val	Arg	Leu	Leu	Lys	Phe	Ser	Arg	Glu	Lys	Lys	Ala	Ala	Lys
		260					265						270		
Thr	Leu	Gly	Ile	Val	Val	Gly	Cys	Phe	Val	Leu	Cys	Trp	Leu	Pro	Phe
	275						280					285			
Phe	Leu	Val	Met	Pro	Ile	Gly	Ser	Phe	Phe	Pro	Asp	Phe	Lys	Pro	Ser
	290					295					300				
Glu	Thr	Val	Phe	Lys	Ile	Val	Phe	Trp	Leu	Gly	Tyr	Leu	Asn	Ser	Cys
305					310					315					320
Ile	Asn	Pro	Ile	Ile	Tyr	Pro	Cys	Ser	Ser	Gln	Glu	Phe	Lys	Lys	Ala
			325						330					335	
Phe	Gln	Asn	Val	Leu	Arg	Ile	Gln	Cys	Leu	Cys	Arg	Lys	Gln	Ser	Ser
		340						345					350		
Lys	His	Ala	Leu	Gly	Tyr	Thr	Leu	His	Pro	Pro	Ser	Gln	Ala	Val	Glu
	355						360					365			
Gly	Gln	His	Lys	Asp	Met	Val	Arg	Ile	Pro	Val	Gly	Ser	Arg	Glu	Thr
	370					375					380				

Phe Tyr Arg Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Phe Phe  
 385 390 395 400

Ser Ser Met Pro Arg Gly Ser Ala Arg Ile Thr Val Ser Lys Asp Gln  
 405 410 415

Ser Ser Cys Thr Thr Ala Arg Arg Gly Met Asp Cys Arg Tyr Phe Thr  
 420 425 430

Lys Asn Cys Arg Glu His Ile Lys His Val Asn Phe Met Met Pro Pro  
 435 440 445

Trp Arg Lys Gly Leu Glu Cys  
 450 455

<210> 18  
 <211> 466  
 <212> PRT  
 <213> Rattus norvegicus norvegicus

<400> 18

Met Val Leu Leu Ser Glu Asn Ala Ser Glu Gly Ser Asn Cys Thr His  
 1 5 10 15

Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile  
 20 25 30

Leu Gly Gly Leu Ile Ile Phe Gly Val Leu Gly Asn Ile Leu Val Ile  
 35 40 45

Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr  
 50 55 60

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu  
 65 70 75 80

Pro Phe Ser Ala Ile Phe Glu Ile Leu Gly Tyr Trp Ala Phe Gly Arg  
 85 90 95

Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala  
 100 105 110

Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val  
 115 120 125

Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Arg Arg Gly Val  
 130 135 140

Arg Ala Leu Leu Cys Val Trp Val Leu Ser Leu Val Ile Ser Ile Gly  
 145 150 155 160

Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Glu Asp Glu Thr Ile Cys  
 165 170 175

Gln Ile Asn Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser  
 180 185 190

Phe Tyr Val Pro Leu Ala Ile Ile Leu Val Met Tyr Cys Arg Val Tyr  
 195 200 205

Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr  
 210 215 220

Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn  
 225 230 235 240

Val Pro Ala Glu Gly Gly Gly Val Ser Ser Ala Lys Asn Lys Thr His  
 245 250 255

Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys  
 260 265 270

Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe  
 275 280 285

Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asp Phe Lys Pro Ser  
 290 295 300

Glu Thr Val Phe Lys Ile Val Phe Trp Leu Gly Tyr Leu Asn Ser Cys  
 305 310 315 320

Ile Asn Pro Ile Ile Tyr Pro Cys Ser Ser Gln Glu Phe Lys Lys Ala  
 325 330 335

Phe Gln Asn Val Leu Arg Ile Gln Cys Leu Arg Arg Arg Gln Ser Ser

340                                      345                                      350  
 Lys His Ala Leu Gly Tyr Thr Leu His Pro Pro Ser Gln Ala Leu Glu  
                  355                                      360                                      365  
 Gly Gln His Arg Asp Met Val Arg Ile Pro Val Gly Ser Gly Glu Thr  
                  370                                      375                                      380  
 Phe Tyr Lys Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Phe Phe  
 385                                      390                                      395                                      400  
 Ser Ser Met Pro Gln Gly Ser Ala Arg Ile Thr Val Pro Lys Asp Gln  
    405                                      410                                      415  
 Ser Ala Cys Thr Thr Ala Arg Val Arg Ser Lys Ser Phe Leu Gln Val  
    420                                      425                                      430  
 Cys Cys Cys Val Gly Ser Ser Ala Pro Arg Pro Glu Glu Asn His Gln  
    435                                      440                                      445  
 Val Pro Thr Ile Lys Ile His Thr Ile Ser Leu Gly Glu Asn Gly Glu  
    450                                      455                                      460  
 Glu Val  
 465  
  
 <210> 19  
 <211> 466  
 <212> PRT  
 <213> Mus musculus  
  
 <400> 19  
 Met Val Leu Leu Ser Glu Asn Ala Ser Glu Gly Ser Asn Cys Thr His  
 1                                      5                                      10                                      15  
 Pro Pro Ala Gln Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile  
    20                                      25                                      30  
 Leu Gly Gly Leu Ile Ile Phe Gly Val Leu Gly Asn Ile Leu Val Ile  
    35                                      40                                      45  
 Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr  
    50                                      55                                      60



Ile	Val	Asn	Leu	Ala	Val	Ala	Asp	Leu	Leu	Leu	Thr	Ser	Thr	Val	Leu	65	70	75	80
Pro	Phe	Ser	Ala	Ile	Phe	Glu	Ile	Leu	Gly	Tyr	Trp	Ala	Phe	Gly	Arg	85	90	95	
Val	Phe	Cys	Asn	Ile	Trp	Ala	Ala	Val	Asp	Val	Leu	Cys	Cys	Thr	Ala	100	105	110	
Ser	Ile	Met	Gly	Leu	Cys	Ile	Ile	Ser	Ile	Asp	Arg	Tyr	Ile	Gly	Val	115	120	125	
Ser	Tyr	Pro	Leu	Arg	Tyr	Pro	Thr	Ile	Val	Thr	Gln	Arg	Arg	Gly	Val	130	135	140	
Arg	Ala	Leu	Leu	Cys	Val	Trp	Ala	Leu	Ser	Leu	Val	Ile	Ser	Ile	Gly	145	150	155	160
Pro	Leu	Phe	Gly	Trp	Arg	Gln	Gln	Ala	Pro	Glu	Asp	Glu	Thr	Ile	Cys	165	170	175	
Gln	Ile	Asn	Glu	Glu	Pro	Gly	Tyr	Val	Leu	Phe	Ser	Ala	Leu	Gly	Ser	180	185	190	
Phe	Tyr	Val	Pro	Leu	Thr	Ile	Ile	Leu	Val	Met	Tyr	Cys	Arg	Val	Tyr	195	200	205	
Val	Val	Ala	Lys	Arg	Glu	Ser	Arg	Gly	Leu	Lys	Ser	Gly	Leu	Lys	Thr	210	215	220	
Asp	Lys	Ser	Asp	Ser	Glu	Gln	Val	Thr	Leu	Arg	Ile	His	Arg	Lys	Asn	225	230	235	240
Val	Pro	Ala	Glu	Gly	Ser	Gly	Val	Ser	Ser	Ala	Lys	Asn	Lys	Thr	His	245	250	255	
Phe	Ser	Val	Arg	Leu	Leu	Lys	Phe	Ser	Arg	Glu	Lys	Lys	Ala	Ala	Lys	260	265	270	
Thr	Leu	Gly	Ile	Val	Val	Gly	Cys	Phe	Val	Leu	Cys	Trp	Leu	Pro	Phe	275	280	285	

Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asn Phe Lys Pro Pro  
 290 295 300

Glu Thr Val Phe Lys Ile Val Phe Trp Leu Gly Tyr Leu Asn Ser Cys  
 305 310 315 320

Ile Asn Pro Ile Ile Tyr Pro Cys Ser Ser Gln Glu Phe Lys Lys Ala  
 325 330 335

Phe Gln Asn Val Leu Arg Ile Gln Cys Leu Arg Arg Arg Gln Ser Ser  
 340 345 350

Lys His Ala Leu Gly Tyr Thr Leu His Pro Pro Ser Gln Ala Val Glu  
 355 360 365

Glu Gln His Arg Gly Met Val Arg Ile Pro Val Gly Ser Gly Glu Thr  
 370 375 380

Phe Tyr Lys Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Phe Phe  
 385 390 395 400

Ser Ser Met Pro Gln Gly Ser Ala Arg Ile Thr Met Pro Lys Asp Gln  
 405 410 415

Ser Ala Cys Thr Thr Ala Arg Val Arg Ser Lys Ser Phe Leu Gln Val  
 420 425 430

Cys Cys Cys Val Gly Ser Ser Thr Pro Arg Pro Glu Glu Asn His Gln  
 435 440 445

Val Pro Thr Ile Lys Ile His Thr Ile Ser Leu Gly Glu Asn Gly Glu  
 450 455 460

Glu Val  
 465

<210> 20  
 <211> 466  
 <212> PRT  
 <213> Bos taurus

<400> 20

Met Val Phe Leu Ser Gly Asn Ala Ser Asp Ser Ser Asn Cys Thr His  
 1 5 10 15

Pro Pro Pro Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile  
 20 25 30

Leu Gly Gly Leu Ile Leu Phe Gly Val Leu Gly Asn Ile Leu Val Ile  
 35 40 45

Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr  
 50 55 60

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu  
 65 70 75 80

Pro Phe Ser Ala Ile Phe Glu Ile Leu Gly Tyr Trp Ala Phe Gly Arg  
 85 90 95

Val Phe Cys Asn Val Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala  
 100 105 110

Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val  
 115 120 125

Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Lys Arg Gly Leu  
 130 135 140

Met Ala Leu Leu Cys Val Trp Ala Leu Ser Leu Val Ile Ser Ile Gly  
 145 150 155 160

Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Glu Asp Glu Thr Ile Cys  
 165 170 175

Gln Ile Asn Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser  
 180 185 190

Phe Tyr Val Pro Leu Thr Ile Ile Leu Val Met Tyr Cys Arg Val Tyr  
 195 200 205

Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr  
 210 215 220

Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn  
 225 230 235 240

Ala Gln Val Gly Gly Ser Gly Val Thr Ser Ala Lys Asn Lys Thr His  
                     245                    250                    255

Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys  
                     260                    265                    270

Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe  
                     275                    280                    285

Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asp Phe Arg Pro Ser  
                     290                    295                    300

Glu Thr Val Phe Lys Ile Ala Phe Trp Leu Gly Tyr Leu Asn Ser Cys  
 305                    310                    315                    320

Ile Asn Pro Ile Ile Tyr Pro Cys Ser Ser Gln Glu Phe Lys Lys Ala  
                     325                    330                    335

Phe Gln Asn Val Leu Arg Ile Gln Cys Leu Arg Arg Lys Gln Ser Ser  
                     340                    345                    350

Lys His Thr Leu Gly Tyr Thr Leu His Ala Pro Ser His Val Leu Glu  
                     355                    360                    365

Gly Gln His Lys Asp Leu Val Arg Ile Pro Val Gly Ser Ala Glu Thr  
                     370                    375                    380

Phe Tyr Lys Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Ile Phe  
 385                    390                    395                    400

Ser Ser Leu Pro Arg Gly Ser Ala Arg Met Ala Val Ala Arg Asp Pro  
                     405                    410                    415

Ser Ala Cys Thr Thr Ala Arg Val Arg Ser Lys Ser Phe Leu Gln Val  
                     420                    425                    430

Cys Cys Cys Leu Gly Pro Ser Thr Pro Ser His Gly Glu Asn His Gln  
                     435                    440                    445

Ile Pro Thr Ile Lys Ile His Thr Ile Ser Leu Ser Glu Asn Gly Glu  
                     450                    455                    460

Glu Val  
465

<210> 21  
<211> 295  
<212> PRT  
<213> Canis familiaris

<400> 21

Met Val Phe Leu Ser Gly Asn Ala Ser Asp Ser Ser Asn Cys Thr His  
1 5 10 15

Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile  
20 25 30

Leu Gly Gly Leu Ile Ile Phe Gly Val Leu Gly Asn Ile Leu Val Ile  
35 40 45

Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr  
50 55 60

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu  
65 70 75 80

Pro Phe Ser Ala Ile Phe Glu Ile Leu Gly Tyr Trp Ala Phe Gly Arg  
85 90 95

Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala  
100 105 110

Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val  
115 120 125

Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Lys Arg Gly Leu  
130 135 140

Met Ala Leu Leu Cys Val Trp Ala Leu Ser Leu Val Ile Ser Ile Gly  
145 150 155 160

Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Glu Asp Glu Thr Ile Cys  
165 170 175

Gln Ile Thr Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser  
180 185 190

Phe Tyr Val Pro Leu Thr Ile Ile Leu Val Met Tyr Cys Arg Val Tyr  
195 200 205

Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr  
210 215 220

Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn  
225 230 235 240

Ala Pro Val Gly Gly Thr Gly Val Ser Ser Ala Lys Asn Lys Thr His  
245 250 255

Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys  
260 265 270

Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe  
275 280 285

Phe Leu Val Met Pro Ile Gly  
290 295

<210> 22  
<211> 466  
<212> PRT  
<213> Oryctolagus cuniculus

<400> 22

Met Val Phe Leu Ser Gly Asn Ala Ser Asp Ser Ser Asn Cys Thr His  
1 5 10 15

Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile  
20 25 30

Leu Gly Gly Leu Ile Leu Phe Gly Val Leu Gly Asn Ile Leu Val Ile  
35 40 45

Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr  
50 55 60

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu  
65 70 75 80

Pro Phe Ser Ala Ile Phe Glu Ile Leu Gly Tyr Trp Ala Phe Gly Arg  
                     85                    90                    95

Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala  
                     100                    105                    110

Ser Ile Ile Ser Leu Cys Val Ile Ser Ile Asp Arg Tyr Ile Gly Val  
                     115                    120                    125

Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Arg Arg Gly Leu  
                     130                    135                    140

Arg Ala Leu Leu Cys Val Trp Ala Phe Ser Leu Val Ile Ser Val Gly  
 145                    150                    155                    160

Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Asp Asp Glu Thr Ile Cys  
                     165                    170                    175

Gln Ile Asn Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser  
                     180                    185                    190

Phe Tyr Val Pro Leu Thr Ile Ile Leu Ala Met Tyr Cys Arg Val Tyr  
                     195                    200                    205

Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr  
                     210                    215                    220

Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn  
 225                    230                    235                    240

Ala Pro Ala Gly Gly Ser Gly Val Ala Ser Ala Lys Asn Lys Thr His  
                     245                    250                    255

Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys  
                     260                    265                    270

Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe  
                     275                    280                    285

Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asp Phe Lys Pro Pro  
                     290                    295                    300

Glu Thr Val Phe Lys Ile Val Phe Trp Leu Gly Tyr Leu Asn Ser Cys

305                      310                      315                      320

Phe Gln Asn Val Leu Lys Ile Gln Cys Leu Arg Arg Lys Gln Ser Ser  
340 345 350

Gly Gln His Lys Asp Met Val Arg Ile Pro Val Gly Ser Gly Glu Thr  
370 375 380

Ser Ser Met Pro Arg Gly Ser Ala Arg Ile Thr Val Pro Lys Asp Gln  
405 410 415

Cys Cys Cys Val Gly Pro Ser Thr Pro Asn Pro Gly Glu Asn His Gln  
435 440 445

Glu Val  
465

<400> 23

Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile  
20 25 30



Leu Gly Gly Leu Ile Leu Phe Gly Val Leu Gly Asn Ile Leu Val Ile  
 35 40 45

Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr  
 50 55 60

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu  
 65 70 75 80

Pro Phe Ser Ala Ile Phe Glu Val Leu Gly Tyr Trp Ala Phe Gly Arg  
 85 90 95

Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala  
 100 105 110

Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val  
 115 120 125

Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Arg Arg Gly Leu  
 130 135 140

Met Ala Leu Leu Cys Val Trp Ala Leu Ser Leu Val Ile Ser Ile Gly  
 145 150 155 160

Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Glu Asp Glu Thr Ile Cys  
 165 170 175

Gln Ile Asn Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser  
 180 185 190

Phe Tyr Leu Pro Leu Ala Ile Ile Leu Val Met Tyr Cys Arg Val Tyr  
 195 200 205

Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr  
 210 215 220

Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn  
 225 230 235 240

Ala Pro Ala Gly Gly Ser Gly Met Ala Ser Ala Lys Thr Lys Thr His  
 245 250 255

Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys  
260 265 270

Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe  
275 280 285

Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asp Phe Lys Pro Ser  
290 295 300

Glu Thr Val Phe Lys Ile Val Phe Trp Leu Gly Tyr Leu Asn Ser Cys  
305 310 315 320

Ile Asn Pro Ile Ile Tyr Pro Cys Ser Ser Gln Glu Phe Lys Lys Ala  
325 330 335

Phe Gln Asn Val Leu Arg Ile Gln Cys Leu Cys Arg Lys Gln Ser Ser  
340 345 350

Lys His Ala Leu Gly Tyr Thr Leu His Pro Pro Ser Gln Ala Val Glu  
355 360 365

Gly Gln His Lys Asp Met Val Arg Ile Pro Val Gly Ser Arg Glu Thr  
370 375 380

Phe Tyr Arg Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Phe Phe  
385 390 395 400

Ser Ser Met Pro Arg Gly Ser Ala Arg Ile Thr Val Ser Lys Asp Gln  
405 410 415

Ser Ser Cys Thr Thr Ala Arg Val Arg Ser Lys Ser Phe Leu Gln Val  
420 425 430

Cys Cys Cys Val Gly Pro Ser Thr Pro Ser Leu Asp Lys Asn His Gln  
435 440 445

Val Pro Thr Ile Lys Val His Thr Ile Ser Leu Ser Glu Asn Gly Glu  
450 455 460

Glu Val  
465

<210> 24

<211> 470  
 <212> PRT  
 <213> Oryzias latipes

<400> 24

Met Thr Pro Ser Ser Val Thr Leu Asn Cys Ser Asn Cys Ser His Val  
 1 5 10 15

Leu Ala Pro Glu Leu Asn Thr Val Lys Ala Val Val Leu Gly Met Val  
 20 25 30

Leu Gly Ile Phe Ile Leu Phe Gly Val Ile Gly Asn Ile Leu Val Ile  
 35 40 45

Leu Ser Val Val Cys His Arg His Leu Gln Thr Val Thr Tyr Tyr Phe  
 50 55 60

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Ser Ser Thr Val Leu  
 65 70 75 80

Pro Phe Ser Ala Ile Phe Glu Ile Leu Asp Arg Trp Val Phe Gly Arg  
 85 90 95

Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala  
 100 105 110

Ser Ile Met Ser Leu Cys Val Ile Ser Val Asp Arg Tyr Ile Gly Val  
 115 120 125

Ser Tyr Pro Leu Arg Tyr Pro Ala Ile Met Thr Lys Arg Arg Ala Leu  
 130 135 140

Leu Ala Val Met Leu Leu Trp Val Leu Ser Val Ile Ile Ser Ile Gly  
 145 150 155 160

Pro Leu Phe Gly Trp Lys Glu Pro Ala Pro Glu Asp Glu Thr Val Cys  
 165 170 175

Lys Ile Thr Glu Glu Pro Gly Tyr Ala Ile Phe Ser Ala Val Gly Ser  
 180 185 190

Phe Tyr Leu Pro Leu Ala Ile Ile Leu Ala Met Tyr Cys Arg Val Tyr  
 195 200 205

Val	Val	Ala	Gln	Lys	Glu	Ser	Arg	Gly	Leu	Lys	Glu	Gly	Gln	Lys	Ile	210	215	220	
Glu	Lys	Ser	Asp	Ser	Glu	Gln	Val	Ile	Leu	Arg	Met	His	Arg	Gly	Asn	225	230	235	240
Thr	Thr	Val	Ser	Glu	Asp	Glu	Ala	Leu	Arg	Ser	Arg	Thr	His	Phe	Ala	245	250	255	
Leu	Arg	Leu	Leu	Lys	Phe	Ser	Arg	Glu	Lys	Lys	Ala	Ala	Lys	Thr	Leu	260	265	270	
Gly	Ile	Val	Val	Gly	Cys	Phe	Val	Leu	Cys	Trp	Leu	Pro	Phe	Phe	Leu	275	280	285	
Val	Leu	Pro	Ile	Gly	Ser	Ile	Phe	Pro	Ala	Tyr	Arg	Pro	Ser	Asp	Thr	290	295	300	
Val	Phe	Lys	Ile	Thr	Phe	Trp	Leu	Gly	Tyr	Phe	Asn	Ser	Cys	Ile	Asn	305	310	315	320
Pro	Ile	Ile	Tyr	Leu	Cys	Ser	Asn	Gln	Glu	Phe	Lys	Lys	Ala	Phe	Gln	325	330	335	
Ser	Leu	Leu	Gly	Val	His	Cys	Leu	Arg	Met	Thr	Pro	Arg	Ala	His	His	340	345	350	
His	His	Leu	Ser	Val	Gly	Gln	Ser	Gln	Thr	Gln	Gly	His	Ser	Leu	Thr	355	360	365	
Ile	Ser	Leu	Asp	Ser	Lys	Gly	Ala	Pro	Cys	Arg	Leu	Ser	Pro	Ser	Ser	370	375	380	
Ser	Val	Ala	Leu	Ser	Arg	Thr	Pro	Ser	Ser	Arg	Asp	Ser	Arg	Glu	Trp	385	390	395	400
Arg	Val	Phe	Ser	Gly	Gly	Pro	Ile	Asn	Ser	Gly	Pro	Gly	Pro	Thr	Glu	405	410	415	
Ala	Gly	Arg	Ala	Lys	Val	Ala	Lys	Leu	Cys	Asn	Lys	Ser	Leu	His	Arg	420	425	430	

Thr Cys Cys Cys Ile Leu Arg Ala Arg Thr Pro Thr Gln Asp Pro Ala  
 435 440 445

Pro Leu Gly Asp Leu Pro Thr Ile Lys Ile His Gln Leu Ser Leu Ser  
 450 455 460

Glu Lys Gly Glu Ser Val  
 465 470

<210> 25  
 <211> 391  
 <212> PRT  
 <213> Branchiostoma lanceolatum

<400> 25

Met Ser Ala Asn Thr Thr Val Ser Pro Thr Glu Thr Thr Ala Asn Leu  
 1 5 10 15

Thr Ala Asn Ser Thr Glu Ala Ser Val Gly Ser Cys Phe Ala Pro Asn  
 20 25 30

Pro Tyr Ser Ala Gly Val Gln Ala Val Leu Gly Leu Ile Thr Val Ile  
 35 40 45

Leu Ile Leu Leu Thr Val Ile Gly Asn Val Leu Val Ile Leu Ala Val  
 50 55 60

Thr Cys His Arg Lys Met Arg Thr Val Thr Asn Phe Phe Ile Val Ser  
 65 70 75 80

Leu Ala Cys Ala Asp Leu Ser Val Gly Ile Thr Val Leu Pro Phe Ala  
 85 90 95

Ala Thr Asn Asp Ile Leu Gly Tyr Trp Pro Phe Gly Gly Tyr Cys Asp  
 100 105 110

Val Trp Val Ser Phe Asp Val Leu Asn Ser Thr Ala Ser Ile Leu Asn  
 115 120 125

Leu Val Val Ile Ala Phe Asp Arg Phe Leu Ala Ile Thr Ala Pro Phe  
 130 135 140

Thr Tyr His Thr Arg Met Thr Glu Arg Thr Ala Gly Ile Leu Ile Ala  
 145 150 155 160

Thr Val Trp Gly Ile Ser Leu Val Val Ser Phe Leu Pro Ile Gln Ala  
165 170 175

Gly Trp Tyr Arg Asp Asn Gln Ser Glu Glu Ala Leu Ala Ile Tyr Ser  
180 185 190

Asp Pro Cys Leu Cys Ile Phe Thr Ala Ser Thr Ala Tyr Thr Ile Val  
195 200 205

Ser Ser Leu Ile Ser Phe Tyr Ile Pro Leu Leu Ile Met Leu Val Phe  
210 215 220

Tyr Gly Ile Ile Phe Lys Ala Ala Arg Asp Gln Ala Arg Lys Ile Asn  
225 230 235 240

Ala Leu Glu Gly Arg Leu Glu Gln Glu Asn Asn Arg Gly Lys Lys Ile  
245 250 255

Ser Leu Ala Lys Glu Lys Lys Ala Ala Lys Thr Leu Gly Ile Ile Met  
260 265 270

Gly Val Phe Ile Leu Cys Trp Leu Pro Phe Phe Val Val Asn Ile Val  
275 280 285

Asn Pro Phe Cys Asp Arg Cys Val Gln Pro Ala Val Phe Ile Ala Leu  
290 295 300

Thr Trp Leu Gly Trp Ile Asn Ser Cys Phe Asn Pro Ile Ile Tyr Ala  
305 310 315 320

Phe Asn Lys Glu Phe Arg Lys Val Phe Val Lys Met Ile Cys Cys His  
325 330 335

Lys Cys Arg Gly Val Thr Val Gly Pro Asn His Ala Asp Leu Asn Tyr  
340 345 350

Asp Pro Val Ala Met Arg Leu Lys Lys Arg Gly Glu Asn Ala Asn Gly  
355 360 365

Thr Val Asn Gly Asp Ala Asn Gly Lys Ala Asn Gly Asn Ile Glu Ala  
370 375 380

Gly Glu Gly Thr Ser Ser Ser  
385 390

<210> 26  
<211> 36  
<212> PRT  
<213> Homo sapiens

<400> 26

Met Thr Ser Thr Cys Thr Asn Ser Thr Arg Glu Ser Asn Ser Ser His  
1 5 10 15

Thr Cys Met Pro Leu Ser Lys Met Pro Ile Ser Leu Ala His Gly Ile  
20 25 30

Ile Arg Ser Thr  
35

<210> 27  
<211> 13  
<212> PRT  
<213> Homo sapiens

<400> 27

Gln Arg Lys Pro Gln Leu Leu Gln Val Thr Asn Arg Phe  
1 5 10

<210> 28  
<211> 5  
<212> PRT  
<213> Homo sapiens

<400> 28

Trp Pro Leu Asn Ser  
1 5

<210> 29  
<211> 20  
<212> PRT  
<213> Homo sapiens

<400> 29

Asp Arg Tyr Leu Ser Ile Ile His Pro Leu Ser Tyr Pro Ser Lys Met  
1 5 10 15

Thr Gln Arg Arg  
20

<210> 30  
<211> 23  
<212> PRT  
<213> Homo sapiens

<400> 30

Gly Gln Ala Ala Phe Asp Glu Arg Asn Ala Leu Cys Ser Met Ile Trp  
1 5 10 15

Gly Ala Ser Pro Ser Tyr Thr  
20

<210> 31  
<211> 182  
<212> PRT  
<213> Homo sapiens

<400> 31

Cys Ala Ala Arg Arg Gln His Ala Leu Leu Tyr Asn Val Lys Arg His  
1 5 10 15

Ser Leu Glu Val Arg Val Lys Asp Cys Val Glu Asn Glu Asp Glu Glu  
20 25 30

Gly Ala Glu Lys Lys Glu Glu Phe Gln Asp Glu Ser Glu Phe Arg Arg  
35 40 45

Gln His Glu Gly Glu Val Lys Ala Lys Glu Gly Arg Met Glu Ala Lys  
50 55 60

Asp Gly Ser Leu Lys Ala Lys Glu Gly Ser Thr Gly Thr Ser Glu Ser  
65 70 75 80

Ser Val Glu Ala Gly Ser Glu Glu Val Arg Glu Ser Ser Thr Val Ala  
85 90 95

Ser Asp Gly Ser Met Glu Gly Lys Glu Gly Ser Thr Lys Val Glu Glu  
100 105 110

Asn Ser Met Lys Ala Asp Lys Gly Arg Thr Glu Val Asn Gln Cys Ser  
115 120 125



Ile Asp Leu Gly Glu Asp Asp Met Glu Phe Gly Glu Asp Asp Ile Asn  
 130 135 140

Phe Ser Glu Asp Asp Val Glu Ala Val Asn Ile Pro Glu Ser Leu Pro  
 145 150 155 160

Pro Ser Arg Arg Asn Ser Asn Ser Asn Pro Pro Leu Pro Arg Cys Tyr  
 165 170 175

Gln Cys Lys Ala Ala Lys  
 180

<210> 32  
 <211> 15  
 <212> PRT  
 <213> Homo sapiens

<400> 32

Ala Val Leu Ala Val Trp Val Asp Val Glu Thr Gln Val Pro Gln  
 1 5 10 15

<210> 33  
 <211> 55  
 <212> PRT  
 <213> Homo sapiens

<400> 33

Tyr Gly Tyr Met His Lys Thr Ile Lys Lys Glu Ile Gln Asp Met Leu  
 1 5 10 15

Lys Lys Phe Phe Cys Lys Glu Lys Pro Pro Lys Glu Asp Ser His Pro  
 20 25 30

Asp Leu Pro Gly Thr Glu Gly Gly Thr Glu Gly Lys Ile Val Pro Ser  
 35 40 45

Tyr Asp Ser Ala Thr Phe Pro  
 50 55

<210> 34  
 <211> 20  
 <212> DNA  
 <213> Homo sapiens

<400> 34

gcagagcact cctccactct 20

<210> 35  
<211> 20  
<212> DNA  
<213> Homo sapiens

<400> 35  
agcaggcaat catgacaatc 20

<210> 36  
<211> 20  
<212> DNA  
<213> Homo sapiens

<400> 36  
gttagcctca cccacctgtt 20

<210> 37  
<211> 20  
<212> DNA  
<213> Homo sapiens

<400> 37  
cacaatccag gtgccataga 20

<210> 38  
<211> 42  
<212> DNA  
<213> Homo sapiens

<400> 38  
gtccccaagc ttgcaccatg acgtccacct gcaccaacag ca 42

<210> 39  
<211> 62  
<212> DNA  
<213> Homo sapiens

<400> 39  
cgggatccta cttgtcgtcg tcgtccttgt agtccatagg aaaagtagca gaatcgtagg 60

aa 62

<210> 40  
<211> 407  
<212> PRT  
<213> Homo sapiens

<400> 40

Met Ser Leu Asn Ser Ser Leu Ser Cys Arg Lys Glu Leu Ser Asn Leu  
 1 5 10 15  
 Thr Glu Glu Glu Gly Gly Glu Gly Gly Val Ile Ile Thr Gln Phe Ile  
 20 25 30  
 Ala Ile Ile Val Ile Thr Ile Phe Val Cys Leu Gly Asn Leu Val Ile  
 35 40 45  
 Val Val Thr Leu Tyr Lys Lys Ser Tyr Leu Leu Thr Leu Ser Asn Lys  
 50 55 60  
 Phe Val Phe Ser Leu Thr Leu Ser Asn Phe Leu Leu Ser Val Leu Val  
 65 70 75 80  
 Leu Pro Phe Val Val Thr Ser Ser Ile Arg Arg Glu Trp Ile Phe Gly  
 85 90 95  
 Val Val Trp Cys Asn Phe Ser Ala Leu Leu Tyr Leu Leu Ile Ser Ser  
 100 105 110  
 Ala Ser Met Leu Thr Leu Gly Val Ile Ala Ile Asp Arg Tyr Tyr Ala  
 115 120 125  
 Val Leu Tyr Pro Met Val Tyr Pro Met Lys Ile Thr Gly Asn Arg Ala  
 130 135 140  
 Val Met Ala Leu Val Tyr Ile Trp Leu His Ser Leu Ile Gly Cys Leu  
 145 150 155 160  
 Pro Pro Leu Phe Gly Trp Ser Ser Val Glu Phe Asp Glu Phe Lys Trp  
 165 170 175  
 Met Cys Val Ala Ala Trp His Arg Glu Pro Gly Tyr Thr Ala Phe Trp  
 180 185 190  
 Gln Ile Trp Cys Ala Leu Phe Pro Phe Leu Val Met Leu Val Cys Tyr  
 195 200 205  
 Gly Phe Ile Phe Arg Val Ala Arg Val Lys Ala Arg Lys Val His Cys  
 210 215 220  
 Gly Thr Val Val Ile Val Glu Glu Asp Ala Gln Arg Thr Gly Arg Lys

225                      230                      235                      240  
 Asn Ser Ser Thr Ser Thr Ser Ser Ser Gly Ser Arg Arg Asn Ala Phe  
                                  245                      250                      255  
 Gln Gly Val Val Tyr Ser Ala Asn Gln Cys Lys Ala Leu Ile Thr Ile  
                                  260                      265                      270  
 Leu Val Val Leu Gly Ala Phe Met Val Thr Trp Gly Pro Tyr Met Val  
                                  275                      280                      285  
 Val Ile Ala Ser Glu Ala Leu Trp Gly Lys Ser Ser Val Ser Pro Ser  
                                  290                      295                      300  
 Leu Glu Thr Trp Ala Thr Trp Leu Ser Phe Ala Ser Ala Val Cys His  
 305                                   310                      315                      320  
 Pro Leu Ile Tyr Gly Leu Trp Asn Lys Thr Val Arg Lys Glu Leu Leu  
                                  325                      330                      335  
 Gly Met Cys Phe Gly Asp Arg Tyr Tyr Arg Glu Pro Phe Val Gln Arg  
                                  340                      345                      350  
 Gln Arg Thr Ser Arg Leu Phe Ser Ile Ser Asn Arg Ile Thr Asp Leu  
                                  355                      360                      365  
 Gly Leu Ser Pro His Leu Thr Ala Leu Met Ala Gly Gly Gln Pro Leu  
                                  370                      375                      380  
 Gly His Ser Ser Ser Thr Gly Asp Thr Gly Phe Ser Cys Ser Gln Asp  
 385                                   390                      395                      400  
 Ser Gly Asn Leu Arg Ala Leu  
                                  405  
  
 <210> 41  
 <211> 448  
 <212> PRT  
 <213> Homo sapiens  
  
 <400> 41  
 Met Thr Ser Thr Cys Thr Asn Ser Thr Arg Glu Ser Asn Ser Ser His  
 1                      5                      10                      15

Thr	Cys	Met	Pro	Leu	Ser	Lys	Met	Pro	Ile	Ser	Leu	Ala	His	Gly	Ile
			20					25					30		
Ile	Arg	Ser	Thr	Val	Leu	Val	Ile	Phe	Leu	Ala	Ala	Ser	Phe	Val	Gly
		35					40					45			
Asn	Ile	Val	Leu	Ala	Leu	Val	Leu	Gln	Arg	Lys	Pro	Gln	Leu	Leu	Gln
	50					55					60				
Val	Thr	Asn	Arg	Phe	Ile	Phe	Asn	Leu	Leu	Val	Thr	Asp	Leu	Leu	Gln
65					70					75					80
Ile	Ser	Leu	Val	Ala	Pro	Trp	Val	Val	Ala	Thr	Ser	Val	Pro	Leu	Phe
				85					90					95	
Trp	Pro	Leu	Asn	Ser	His	Phe	Cys	Thr	Ala	Leu	Val	Ser	Leu	Thr	His
			100					105					110		
Leu	Phe	Ala	Phe	Ala	Ser	Val	Asn	Thr	Ile	Val	Val	Val	Ser	Val	Asp
		115					120					125			
Arg	Tyr	Leu	Ser	Ile	Ile	His	Pro	Leu	Ser	Tyr	Pro	Ser	Lys	Met	Thr
		130				135					140				
Gln	Arg	Arg	Gly	Tyr	Leu	Leu	Leu	Tyr	Gly	Thr	Trp	Ile	Val	Ala	Ile
145					150					155					160
Leu	Gln	Ser	Thr	Pro	Pro	Leu	Tyr	Gly	Trp	Gly	Gln	Ala	Ala	Phe	Asp
				165					170					175	
Glu	Arg	Asn	Ala	Leu	Cys	Ser	Met	Ile	Trp	Gly	Ala	Ser	Pro	Ser	Tyr
			180					185					190		
Thr	Ile	Leu	Ser	Val	Val	Ser	Phe	Ile	Val	Ile	Pro	Leu	Ile	Val	Met
		195					200					205			
Ile	Ala	Cys	Tyr	Ser	Val	Val	Phe	Cys	Ala	Ala	Arg	Arg	Gln	His	Ala
		210				215					220				
Leu	Leu	Tyr	Asn	Val	Lys	Arg	His	Ser	Leu	Glu	Val	Arg	Val	Lys	Asp
225					230					235					240

Cys Val Glu Asn Glu Asp Glu Glu Gly Ala Glu Lys Lys Glu Glu Phe  
245 250 255

Gln Asp Glu Ser Glu Phe Arg Arg Gln His Glu Gly Glu Val Lys Ala  
260 265 270

Lys Glu Gly Arg Met Glu Ala Lys Asp Gly Ser Leu Lys Ala Lys Glu  
275 280 285

Gly Ser Thr Gly Thr Ser Glu Ser Ser Val Glu Ala Arg Gly Ser Glu  
290 295 300

Glu Val Arg Glu Ser Ser Thr Val Ala Ser Asp Gly Ser Met Glu Gly  
305 310 315 320

Lys Glu Gly Ser Thr Lys Val Glu Glu Asn Ser Met Lys Ala Asp Lys  
325 330 335

Gly Arg Thr Glu Val Asn Gln Cys Ser Ile Asp Leu Gly Glu Asp Asp  
340 345 350

Met Glu Phe Gly Glu Asp Asp Ile Asn Phe Ser Glu Asp Asp Val Glu  
355 360 365

Ala Val Asn Ile Pro Glu Ser Leu Pro Pro Ser Arg Arg Asn Ser Asn  
370 375 380

Ser Asn Pro Pro Leu Pro Arg Cys Tyr Gln Cys Lys Ala Lys Lys Val  
385 390 395 400

Ile Phe Ile Ile Ile Phe Ser Tyr Val Leu Ser Leu Gly Pro Tyr Cys  
405 410 415

Phe Leu Ala Val Glu Asp Ser His Pro Asp Leu Pro Gly Thr Glu Gly  
420 425 430

Gly Thr Glu Gly Lys Ile Val Pro Ser Tyr Asp Ser Ala Thr Phe Pro  
435 440 445

<210> 42  
<211> 448  
<212> PRT  
<213> Homo sapiens

<400> 42

Met Thr Ser Thr Cys Thr Asn Ser Thr Arg Glu Ser Asn Ser Ser His  
1 5 10 15

Thr Cys Met Pro Leu Ser Lys Met Pro Ile Ser Leu Ala His Gly Ile  
20 25 30

Ile Arg Ser Thr Val Leu Val Ile Phe Leu Ala Ala Ser Phe Val Gly  
35 40 45

Asn Ile Val Leu Ala Leu Val Leu Gln Arg Lys Pro Gln Leu Leu Gln  
50 55 60

Val Thr Asn Arg Phe Ile Phe Asn Leu Leu Val Thr Asp Leu Leu Gln  
65 70 75 80

Ile Ser Leu Val Ala Pro Trp Val Val Ala Thr Ser Val Pro Leu Phe  
85 90 95

Trp Pro Leu Asn Ser His Phe Cys Thr Ala Leu Val Ser Leu Thr His  
100 105 110

Leu Phe Ala Phe Ala Ser Val Asn Thr Ile Val Val Val Ser Val Asp  
115 120 125

Arg Tyr Leu Ser Ile Ile His Pro Leu Ser Tyr Pro Ser Lys Met Thr  
130 135 140

Gln Arg Arg Gly Tyr Leu Leu Leu Tyr Gly Thr Trp Ile Val Ala Ile  
145 150 155 160

Leu Gln Ser Thr Pro Pro Leu Tyr Gly Trp Gly Gln Ala Ala Phe Asp  
165 170 175

Glu Arg Asn Ala Leu Cys Ser Met Ile Trp Gly Ala Ser Pro Ser Tyr  
180 185 190

Thr Ile Leu Ser Val Val Ser Phe Ile Val Ile Pro Leu Ile Val Met  
195 200 205

Ile Ala Cys Tyr Ser Val Val Phe Cys Ala Ala Arg Arg Gln His Ala  
210 215 220

Leu Leu Tyr Asn Val Lys Arg His Ser Leu Glu Val Arg Val Lys Asp  
 225 230 235 240

Cys Val Glu Asn Glu Asp Glu Glu Gly Ala Glu Lys Lys Glu Glu Phe  
 245 250 255

Gln Asp Glu Ser Glu Phe Arg Arg Gln His Glu Gly Glu Val Lys Ala  
 260 265 270

Lys Glu Gly Arg Met Glu Ala Lys Asp Gly Ser Leu Lys Ala Lys Glu  
 275 280 285

Gly Ser Thr Gly Thr Ser Glu Ser Ser Val Glu Ala Arg Gly Ser Glu  
 290 295 300

Glu Val Arg Glu Ser Ser Thr Val Ala Ser Asp Gly Ser Met Glu Gly  
 305 310 315 320

Lys Glu Gly Ser Thr Lys Val Glu Glu Asn Ser Met Lys Ala Asp Lys  
 325 330 335

Gly Arg Thr Glu Val Asn Gln Cys Ser Ile Asp Leu Gly Glu Asp Asp  
 340 345 350

Met Glu Phe Gly Glu Asp Asp Ile Asn Phe Ser Glu Asp Asp Val Glu  
 355 360 365

Ala Val Asn Ile Pro Glu Ser Leu Pro Pro Ser Arg Arg Asn Ser Asn  
 370 375 380

Ser Asn Pro Pro Leu Pro Arg Cys Tyr Gln Cys Lys Ala Lys Lys Val  
 385 390 395 400

Ile Phe Ile Ile Ile Phe Ser Tyr Val Leu Ser Leu Gly Pro Tyr Cys  
 405 410 415

Phe Leu Ala Val Glu Asp Ser His Pro Asp Leu Pro Gly Thr Glu Gly  
 420 425 430

Gly Thr Glu Gly Lys Ile Val Pro Ser Tyr Asp Ser Ala Thr Phe Pro  
 435 440 445



<210> 43  
 <211> 448  
 <212> PRT  
 <213> Homo sapiens

<400> 43

Met Thr Ser Thr Cys Thr Asn Ser Thr Arg Glu Ser Asn Ser Ser His  
 1 5 10 15

Thr Cys Met Pro Leu Ser Lys Met Pro Ile Ser Leu Ala His Gly Ile  
 20 25 30

Ile Arg Ser Thr Val Leu Val Ile Phe Leu Ala Ala Ser Phe Val Gly  
 35 40 45

Asn Ile Val Leu Ala Leu Val Leu Gln Arg Lys Pro Gln Leu Leu Gln  
 50 55 60

Val Thr Asn Arg Phe Ile Phe Asn Leu Leu Val Thr Asp Leu Leu Gln  
 65 70 75 80

Ile Ser Leu Val Ala Pro Trp Val Val Ala Thr Ser Val Pro Leu Phe  
 85 90 95

Trp Pro Leu Asn Ser His Phe Cys Thr Ala Leu Val Ser Leu Thr His  
 100 105 110

Leu Phe Ala Phe Ala Ser Val Asn Thr Ile Val Leu Val Ser Val Asp  
 115 120 125

Arg Tyr Leu Ser Ile Ile His Pro Leu Ser Tyr Pro Ser Lys Met Thr  
 130 135 140

Gln Arg Arg Gly Tyr Leu Leu Leu Tyr Gly Thr Trp Ile Val Ala Ile  
 145 150 155 160

Leu Gln Ser Thr Pro Pro Leu Tyr Gly Trp Gly Gln Ala Ala Phe Asp  
 165 170 175

Glu Arg Asn Ala Leu Cys Ser Met Ile Trp Gly Ala Ser Pro Ser Tyr  
 180 185 190

Thr Ile Leu Ser Val Val Ser Phe Ile Val Ile Pro Leu Ile Val Met  
 195 200 205

Ile Ala Cys Tyr Ser Val Val Phe Cys Ala Ala Arg Arg Gln His Ala  
 210 215 220

Leu Leu Tyr Asn Val Lys Arg His Ser Leu Glu Val Arg Val Lys Asp  
 225 230 235 240

Cys Val Glu Asn Glu Asp Glu Glu Gly Ala Glu Lys Lys Glu Glu Phe  
 245 250 255

Gln Asp Glu Ser Glu Phe Arg Arg Gln His Glu Gly Glu Val Lys Ala  
 260 265 270

Lys Glu Gly Arg Met Glu Ala Lys Asp Gly Ser Leu Lys Ala Lys Glu  
 275 280 285

Gly Ser Thr Gly Thr Ser Glu Ser Ser Val Glu Ala Arg Gly Ser Glu  
 290 295 300

Glu Val Arg Glu Ser Ser Thr Val Ala Ser Asp Gly Ser Met Glu Gly  
 305 310 315 320

Lys Glu Gly Ser Thr Lys Val Glu Glu Asn Ser Met Lys Ala Asp Lys  
 325 330 335

Gly Arg Thr Glu Val Asn Gln Cys Ser Ile Asp Leu Gly Glu Asp Gly  
 340 345 350

Met Glu Phe Gly Glu Asp Asp Ile Asn Phe Ser Glu Asp Asp Val Glu  
 355 360 365

Ala Val Asn Ile Pro Glu Ser Leu Pro Pro Ser Arg Arg Asn Ser Asn  
 370 375 380

Ser Asn Pro Pro Leu Pro Arg Cys Tyr Gln Cys Lys Ala Ala Lys Val  
 385 390 395 400

Ile Phe Ile Ile Ile Phe Ser Tyr Val Leu Ser Leu Gly Pro Tyr Cys  
 405 410 415

Phe Leu Ala Val Glu Asp Ser His Pro Asp Leu Pro Gly Thr Glu Gly  
 420 425 430

Gly Thr Glu Gly Lys Ile Val Pro Ser Tyr Asp Ser Ala Thr Phe Pro  
 435 440 445

<210> 44  
 <211> 1659  
 <212> DNA  
 <213> Homo sapiens

<400> 44  
 gcctgcaacc tgtcycacgc cctctggctg ttgccatgac gtccacctgc accaacagca 60  
 cgcgcgagag taacagcagc cacacgtgca tgccctctc caaaatgcc atcagcctgg 120  
 cccacggcat catccgctca accgtgctgg ttatcttctc cgccgcctct ttcgtcggca 180  
 acatagtgtt ggcgctagtg ttgcagcgca agccgcagct gctgcagggt accaaccgtt 240  
 ttatctttaa cctcctcgtc accgacctgc tgcagatttc gctcgtggcc ccctgggtgg 300  
 tgccacacct tgtgcctctc ttctggcccc tcaacagcca cttctgcacg gccctgggta 360  
 gcctcaccca cctgttcgcc ttcgccagcg tcaacacccat tgtcttggtg tcagtggatc 420  
 gctacttgct catcatccac cctctctctc acccgtccaa gatgacctag cgccgcgggt 480  
 acctgctcct ctatggcacc tggattgtgg ccatcctgca gagcactcct ccactctacg 540  
 gctggggcca ggctgccttt gatgagcgca atgctctctg ctccatgata tggggggcca 600  
 gccccagcta cactattctc agcgtgggtg ccttcctcgt cattccactg attgtcatga 660  
 ttgcctgcta ctccgtgggtg ttctgtgcag cccggaggca gcatgctctg ctgtacaatg 720  
 tcaagagaca cagcttgga gtgcgagtcaggactgtgt ggagaatgag gatgaagagg 780  
 gagcagagaa gaaggaggag ttccaggatg agagtgagtt tcgccgccag catgaagggt 840  
 aggtcaaggc caaggagggc agaattggaag ccaaggacgg cagcctgaag gccaaaggaag 900  
 gaagcacggg gaccagtgtg agtagtgtag agggcagggg cagcaggagg gtcagagaga 960  
 gcagcacggg ggcagcgac ggcagcatgg agggtaagga aggcagcacc aaagttgagg 1020  
 agaacagcat gaaggcagac aagggtcgca cagaggtcaa ccagtgcagc attgacttgg 1080  
 gtgaagatgg catggagttt ggtgaagacg acatcaattt cagtaggatg gacgtcgagg 1140  
 cagtgaacat cccggagagc ctcccaccca gtcgtcgtaa cagcaacagc aacctcctc 1200  
 tgcccagggt ctaccagtgc aaagctgcta aagtgatctt catcatcatt ttctcctatg 1260  
 tgctatcctt ggggccctac tgcttttttag cagtctggc cgtgtgggtg gatgtcgaaa 1320  
 cccagggtacc ccagtgggtg atcaccataa tcctctggct tttcttctc cagtgtgca 1380

tccaccccta tgtctatggc tacatgcaca agaccattaa gaaggaaatc caggacatgc	1440
tgaagaagtt cttctgcaag gaaaagcccc cgaaagaaga tagccacca gacctgcccg	1500
gaacagaggg tgggactgaa ggcaagattg tcccttcta cgattctgct acttttcctt	1560
gaagttagtt ctaaggcaaa ccttgaaaat cagtccttca gccacagcta tttagagctt	1620
taaaactacc aggttcaatc actggttatg ctttctgtg	1659

<210> 45  
 <211> 1527  
 <212> DNA  
 <213> Homo sapiens

<400> 45	
atgacgtcca cctgcaccaa cagcacgcgc gagagtaaca gcagccacac gtgcatgccc	60
ctctccaaaa tgcccatcag cctggcccac ggcatcatcc gctcaaccgt gctgggtatc	120
ttctctgccc cctctttcgt cggcaacata gtgctggcgc tagtgttgca gcgcaagccg	180
cagctgctgc aggtgaccaa ccgttttatc tttaacctcc tcgtcaccga cctgctgcag	240
atttctctctg tggccccctg ggtggtggcc acctctgtgc ctctcttctg gcccctcaac	300
agccacttct gcacggccct ggtagcctc acccacctgt tcgccttcgc cagcgtcaac	360
accattgtct tgggtgtcagt ggatcgctac ttgtccatca tccaccctct ctctaccctg	420
tccaagatga cccagcgccg cggttacctg ctctctatg gcacctggat tgtggccatc	480
ctgcagagca ctctccact ctacggctgg ggccaggctg cctttgatga gcgcaatgct	540
ctctgtcca tgatctgggg ggccagcccc agctacacta ttctcagcgt ggtgtccttc	600
atcgtcattc cactgattgt catgattgcc tgctactccg tgggtgttctg tgcagcccgg	660
aggcagcatg ctctgtctga caatgtcaag agacacagct tggagtgcg agtcaaggac	720
tgtgtggaga atgaggatga agagggagca gagaagaagg aggagtcca ggatgagagt	780
gagtttcgcc gccagcatga aggtgaggtc aaggccaagg agggcagaat ggaagccaag	840
gacggcagcc tgaaggccaa ggaaggaagc acggggacca gtgagagtag tgtagaggcc	900
aggggcagcg aggaggtcag agagagcagc acggtggcca gcgacggcag catggagggg	960
aaggaaggca gcaccaaagt tgaggagaac agcatgaagg cagacaaggg tcgcacagag	1020
gtcaaccagt gcagcattga cttgggtgaa gatgacatgg agtttggtga agacgacatc	1080
aatttcagtg aggatgacgt cgaggcagtg aacatcccgg agagcctccc acccagtcgt	1140
cgtaacagca acagcaaccc tcctctgccc aggtgctacc agtgcaaagc tgctaaagtg	1200

atcttcatca tcattttctc ctatgtgcta tccctggggc cctactgctt tttagcagtc	1260
ctggccgtgt ggggtggatgt cgaaaccag gtacccaggt gggatgatcac cataatcatc	1320
tggtttttct tcctgcagtg ctgcatccac ccctatgtct atggctacat gcacaagacc	1380
attaagaagg aaatccagga catgctgaag aagttcttct gcaaggaaaa gccccgaaa	1440
gaagatagcc acccagacct gcccgaaca gaggggtggga ctgaaggcaa gattgtccct	1500
tcctacgatt ctgctacttt tccttga	1527

<210> 46  
 <211> 1527  
 <212> DNA  
 <213> Homo sapiens

<400> 46	
atgacgtcca cctgcaccaa cagcacgcgc gagagtaaca gcagccacac gtgcatgccc	60
ctctccaaaa tgcccatcag cctggccccc ggcatcatcc gctcaaccgt gctgggttacc	120
ttctctgccc cctctttctg cggcaacata gtgctggcgc tagtggttga gcgcaagccg	180
cagctgctgc aggtgaccaa ccgtttttacc tttaacctcc tcgtcacoga cctgctgcag	240
atttcgctcg tggccccctg ggtgggtggc acctctgtgc ctctcttctg gcccctcaac	300
agccacttct gcacggccct ggtagcctc accacctgt tcgccttcgc cagcgtcaac	360
accattgtcg tgggtgtcagt ggatcgctac ttgtccatca tccacctct ctctaccgc	420
tccaagatga cccagcgcgc cggttacctg ctctctatg gcacctggat tgtggccatc	480
ctgcagagca ctctccact ctacggctgg ggccaggctg cctttgatga gcgcaatgct	540
ctctgctcca tgatctgggg ggccagcccc agctacacta ttctcagcgt ggtgtccttc	600
atcgtcattc cactgattgt catgattgcc tgctactccg tgggtgttctg tgcagcccgc	660
aggcagcatg ctctgctgta caatgtcaag agacacagct tggaagtgcg agtcaaggac	720
tgtgtggaga atgaggatga agagggagca gagaagaagg aggagttcca ggatgagagt	780
gagtttcgcc gccagcatga aggtgaggtc aaggccaagg agggcagaat ggaagccaag	840
gacggcagcc tgaaggccaa ggaaggaagc acggggacca gtgagagtag tgtagaggcc	900
aggggcagcg aggaggtcag agagagcagc acgggtggcca gcgacggcag catggagggt	960
aaggaaggca gcaccaaagt tgaggagaac agcatgaagg cagacaaggg tcgcacagag	1020
gtcaaccagt gcagcattga cttgggtgaa gatgacatgg agtttggtga agacgacatc	1080
aatttcagtg aggatgacgt cgaggcagtg aacatcccgc agagcctccc acccagtcgt	1140

cgtaacagca acagcaaccc tcctctgccc aggtgctacc agtgcaaagc taagaaagtg	1200
atcttcatca tcattttctc ctatgtgcta tccctggggc cctactgctt tttagcagtc	1260
ctggccgtgt ggggtggatgt cgaaaccag gtacccaggt ggggtgatcac cataatcatc	1320
tggettttct tcctgcagtg ctgcatccac ccctatgtct atggctacat gcacaagacc	1380
attaagaagg aaatccagga catgctgaag aagttcttct gcaaggaaaa gccccgaaa	1440
gaagatagcc acccagacct gcccggaaca gaggggtggga ctgaaggcaa gattgtccct	1500
tcctacgatt ctgctacttt tccttga	1527

<210> 47  
 <211> 1580  
 <212> DNA  
 <213> Homo sapiens

<400> 47	
gcaacctgtc tcacgccctc tggtctgttc catgacgtcc acctgcacca acagcacgcg	60
cgagagtaac agcagccaca cgtgcatgcc cctctccaaa atgcccata gcctggccca	120
cggcatcacc cgctcaaccg tgctgggttat cttcctcgcc gcctctttcg tcggcaacat	180
agtgctggcg ctagtgttgc agcgcaagcc gcagctgctg caggtgacca accgttttat	240
ctttaacctc ctcgtcaccg acctgctgca gatttcgctc gtggccccct ggggtggtggc	300
cacctctgtg cctctcttct ggccccctca cagccacttc tgcacggccc tggttagcct	360
caccacctg ttgccttcg ccagcgtcaa caccattgtc ttggtgtcag tggatcgcta	420
cttgctcacc atccacctc tctcctaccc gtccaagatg acccagcgcc gcggttacct	480
gctcctctat ggcacctgga ttgtggccat cctgcagagc actcctccac tctacggctg	540
gggccaggct gcctttgatg agcgcaatgc tctctgctcc atgatctggg gggccagccc	600
cagctacact attctcagcg tgggtgtcctt catcgctatt cactgattg tcatgattgc	660
ctgctactcc gtgggtgttct gtgcagcccc gaggcagcat gctctgctgt acaatgtcaa	720
gagacacagc ttggaagtgc gactcaagga ctgtgtggag aatgaggatg aagagggagc	780
agagaagaag gaggagtcc aggatgagag tgagtttcgc cgccagcatg aaggtgaggt	840
caaggccaag gagggcagaa tggaagccaa ggacggcagc ctgaaggcca aggaaggaag	900
cacggggacc agtgagagta gtgtagaggc caggggcagc gaggaggtca gagagagcag	960
cacgggtggc agcgacggca gcatggaggg taaggaaggc agcaccaaag ttgaggagaa	1020
cagcatgaag gcagacaagg gtcgcacaga ggtcaaccag tgcagcattg acttgggtga	1080

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agatgacatg gagtttggtg aagacgacat caatttcagt gaggatgacg tcgaggcagt 1140
gaacatcccc gagagcctcc caccagtcg tcgtaacagc aacagcaacc ctctctgcc 1200
caggtgctac cagtgcaaag ctgctaaagt gatcttcac atcattttct cctatgtgct 1260
atccctgggg ccctactgct ttttagcagt cctggccgtg tgggtggatg tcgaaaccca 1320
ggtaccccag tgggtgatca ccataatcat ctggcttttc ttctgcagt gctgcatcca 1380
cccctatgtc tatggctaca tgcacaagac cattaagaag gaaatccagg acatgctgaa 1440
gaagttcttc tgcaaggaaa agccccgaa agaagatagc caccagacc tgcccggaac 1500
agaggggagg actgaaggca agattgtccc ttctacgat tctgctactt ttcttgaag 1560
ttagttctaa ggcaaacctt 1580

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<210> 48
<211> 1527
<212> DNA
<213> Homo sapiens

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<220>
<221> misc_feature
<222> (370)..(370)
<223> n is a, c, g, or t

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<220>
<221> misc_feature
<222> (1055)..(1055)
<223> n is a, c, g, or t

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<220>
<221> misc_feature
<222> (1192)..(1194)
<223> n is a, c, g, or t

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<400> 48
atgacgtcca cctgcaccaa cagcacgcgc gagagtaaca gcagccacac gtgcatgccc 60
ctctccaaaa tgcccatcag cctggcccac ggcatcatcc gctcaaccgt gctgggtatc 120
ttctcgccg cctctttcgt cggcaacata gtgctggcgc tagtggtgca gcgcaagccg 180
cagctgctgc aggtgaccaa ccgttttatc tttaacctcc tcgtaccga cctgctgcag 240
atttcgctcg tggccccctg ggtgggtggc acctctgtgc ctctctctg gccctcaac 300
agccacttct gcacggccct ggtagcctc accacctgt tcgccttcgc cagcgtcaac 360
accattgctn tgggtgtcagt ggatcgctac ttgtccatca tccacctct ctctaccg 420
tccaagatga cccagcgccg cggttacctg ctctctatg gcacctggat tgtggccatc 480

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ctgcagagca ctccctccact ctacggctgg gccaggtg cctttgatga gcgcaatgct 540
ctctgctcca tgatctgggg ggccagcccc agctacacta ttctcagcgt ggtgtccttc 600
atcgtcattc cactgattgt catgattgcc tgctactccg tgggtgttctg tgcagccccg 660
aggcagcatg ctctgctgta caatgtcaag agacacagct tggaagtgcg agtcaaggac 720
tgtgtggaga atgaggatga agagggagca gagaagaagg aggagtcca ggatgagagt 780
gagtttcgcc gccagcatga aggtgaggtc aaggccaagg agggcagaat ggaagccaag 840
gacggcagcc tgaaggccaa ggaaggaagc acggggacca gtgagagtag tgtagaggcc 900
aggggcagcg aggaggtcag agagagcagc acggtggcca gcgacggcag catggagggt 960
aaggaaggca gcaccaaagt tgaggagaac agcatgaagg cagacaaggg tcgcacagag 1020
gtcaaccagt gcagcattga cttgggtgaa gatgncatgg agtttggtga agacgacatc 1080
aatttcagtg aggatgacgt cgaggcagtg aacatcccgg agagcctccc acccagtcgt 1140
cgtaacagca acagcaaccc tcctctgccc aggtgctacc agtgcaaagc tnnnaaagtg 1200
atcttcatca tcattttctc ctatgtgcta tccctggggc cctactgctt tttagcagtc 1260
ctggccgtgt ggggtggatgt cgaaacccag gtaccccgat ggggtgatcac cataatcatc 1320
tggtttttct tcctgcagtg ctgcatccac ccctatgtct atggctacat gcacaagacc 1380
attaagaagg aaatccagga catgctgaag aagttcttct gcaaggaaaa gcccccgaaa 1440
gaagatagcc acccagacct gcccgaaca gaggggtgga ctgaaggcaa gattgtccct 1500
tcctacgatt ctgctacttt tccttga 1527

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<210> 49
<211> 508
<212> PRT
<213> Homo sapiens

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<220>
<221> misc_feature
<222> (124)..(124)
<223> Xaa can be any naturally occurring amino acid

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<220>
<221> misc_feature
<222> (352)..(352)
<223> Xaa can be any naturally occurring amino acid

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<220>
<221> misc_feature
<222> (398)..(398)
<223> Xaa can be any naturally occurring amino acid

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<400> 49

Met Thr Ser Thr Cys Thr Asn Ser Thr Arg Glu Ser Asn Ser Ser His  
1 5 10 15

Thr Cys Met Pro Leu Ser Lys Met Pro Ile Ser Leu Ala His Gly Ile  
20 25 30

Ile Arg Ser Thr Val Leu Val Ile Phe Leu Ala Ala Ser Phe Val Gly  
35 40 45

Asn Ile Val Leu Ala Leu Val Leu Gln Arg Lys Pro Gln Leu Leu Gln  
50 55 60

Val Thr Asn Arg Phe Ile Phe Asn Leu Leu Val Thr Asp Leu Leu Gln  
65 70 75 80

Ile Ser Leu Val Ala Pro Trp Val Val Ala Thr Ser Val Pro Leu Phe  
85 90 95

Trp Pro Leu Asn Ser His Phe Cys Thr Ala Leu Val Ser Leu Thr His  
100 105 110

Leu Phe Ala Phe Ala Ser Val Asn Thr Ile Val Xaa Val Ser Val Asp  
115 120 125

Arg Tyr Leu Ser Ile Ile His Pro Leu Ser Tyr Pro Ser Lys Met Thr  
130 135 140

Gln Arg Arg Gly Tyr Leu Leu Leu Tyr Gly Thr Trp Ile Val Ala Ile  
145 150 155 160

Leu Gln Ser Thr Pro Pro Leu Tyr Gly Trp Gly Gln Ala Ala Phe Asp  
165 170 175

Glu Arg Asn Ala Leu Cys Ser Met Ile Trp Gly Ala Ser Pro Ser Tyr  
180 185 190

Thr Ile Leu Ser Val Val Ser Phe Ile Val Ile Pro Leu Ile Val Met  
195 200 205

Ile Ala Cys Tyr Ser Val Val Phe Cys Ala Ala Arg Arg Gln His Ala  
210 215 220

Leu Leu Tyr Asn Val Lys Arg His Ser Leu Glu Val Arg Val Lys Asp  
 225 230 235 240

Cys Val Glu Asn Glu Asp Glu Glu Gly Ala Glu Lys Lys Glu Glu Phe  
 245 250 255

Gln Asp Glu Ser Glu Phe Arg Arg Gln His Glu Gly Glu Val Lys Ala  
 260 265 270

Lys Glu Gly Arg Met Glu Ala Lys Asp Gly Ser Leu Lys Ala Lys Glu  
 275 280 285

Gly Ser Thr Gly Thr Ser Glu Ser Ser Val Glu Ala Arg Gly Ser Glu  
 290 295 300

Glu Val Arg Glu Ser Ser Thr Val Ala Ser Asp Gly Ser Met Glu Gly  
 305 310 315 320

Lys Glu Gly Ser Thr Lys Val Glu Glu Asn Ser Met Lys Ala Asp Lys  
 325 330 335

Gly Arg Thr Glu Val Asn Gln Cys Ser Ile Asp Leu Gly Glu Asp Xaa  
 340 345 350

Met Glu Phe Gly Glu Asp Asp Ile Asn Phe Ser Glu Asp Asp Val Glu  
 355 360 365

Ala Val Asn Ile Pro Glu Ser Leu Pro Pro Ser Arg Arg Asn Ser Asn  
 370 375 380

Ser Asn Pro Pro Leu Pro Arg Cys Tyr Gln Cys Lys Ala Xaa Lys Val  
 385 390 395 400

Ile Phe Ile Ile Ile Phe Ser Tyr Val Leu Ser Leu Gly Pro Tyr Cys  
 405 410 415

Phe Leu Ala Val Leu Ala Val Trp Val Asp Val Glu Thr Gln Val Pro  
 420 425 430

Gln Trp Val Ile Thr Ile Ile Ile Trp Leu Phe Phe Leu Gln Cys Cys  
 435 440 445

Ile His Pro Tyr Val Tyr Gly Tyr Met His Lys Thr Ile Lys Lys Glu  
 450 455 460

Ile Gln Asp Met Leu Lys Lys Phe Phe Cys Lys Glu Lys Pro Pro Lys  
 465 470 475 480

Glu Asp Ser His Pro Asp Leu Pro Gly Thr Glu Gly Gly Thr Glu Gly  
 485 490 495

Lys Ile Val Pro Ser Tyr Asp Ser Ala Thr Phe Pro  
 500 505

<210> 50  
 <211> 21  
 <212> DNA  
 <213> Homo sapiens

<400> 50  
 caccattgtc ttggtgtcag t 21

<210> 51  
 <211> 21  
 <212> DNA  
 <213> Homo sapiens

<400> 51  
 caccattgtc gtggtgtcag t 21

<210> 52  
 <211> 21  
 <212> DNA  
 <213> Homo sapiens

<400> 52  
 ggtgaagatg acatggagtt t 21

<210> 53  
 <211> 21  
 <212> DNA  
 <213> Homo sapiens

<400> 53  
 ggtgaagatg gcatggagtt t 21

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 <221> misc\_feature  
 <222> (25)..(83)  
 <223> wherein "n" equals A, C, G, or T.  
  
 <220>  
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 <222> (27)..(84)  
 <223> wherein "b" equals C, G, or T.  
  
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 cgaagcgtaa gggcccagcc ggcennbnnb nnnnnnnnnb nbnnnnnnnn bnnnnnnnnb 60  
 nnnnnnnnnb nbnnnnnnnn bnnbccgggt cggggcggc 99  
  
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 <222> (21)..(78)

<223> wherein "v" equals C, A, or G.

<220>

<221> misc\_feature

<222> (22)..(80)

<223> wherein "n" equals A, C, G, or T.

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nnvnnvnnvn nvnnvnnvnn gccgcccga cccgg 95

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<400> 65

Pro Gly Pro Gly Gly

1 5

<210> 66

<211> 15

<212> PRT

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<400> 66

Gly Asp Phe Trp Tyr Glu Ala Cys Glu Ser Ser Cys Ala Phe Trp

1 5 10 15

<210> 67

<211> 15

<212> PRT

<213> Homo sapiens

<400> 67

Leu Glu Trp Gly Ser Asp Val Phe Tyr Asp Val Tyr Asp Cys Cys

1 5 10 15

<210> 68

<211> 15

<212> PRT

<213> Homo sapiens

<400> 68

Cys Leu Arg Ser Gly Thr Gly Cys Ala Phe Gln Leu Tyr Arg Phe

1 5 10 15

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<400> 69

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<400> 70

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Ser Thr Cys Thr Asn Ser Thr Arg Glu Ser Asn Ser Ser  
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<400> 77

Gln Leu Leu Gln Val Thr Asn Arg Phe Ile Phe Asn Leu  
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<210> 78  
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<400> 78

Tyr Pro Ser Lys Met Thr Gln Arg Arg Gly Tyr Leu Leu  
1 5 10

<210> 79  
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<400> 79

Glu Ala Lys Asp Gly Ser Leu Lys Ala Lys Glu Gly Ser  
1 5 10

<210> 80



<211> 13  
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<400> 80

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<210> 81  
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Lys Val Glu Glu Asn Ser Met Lys Ala Asp Lys Gly Arg  
1 5 10

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<400> 82

Glu Ser Leu Pro Pro Ser Arg Arg Asn Ser Asn Ser Asn  
1 5 10

<210> 83  
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<400> 83

Gly Tyr Met His Lys Thr Ile Lys Lys Glu Ile Gln Asp  
1 5 10

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Ser Thr Cys Thr Asn Ser Thr Arg Glu Ser Asn Ser Ser His  
1 5 10

<210> 85  
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Thr Gly Thr Ser Glu Ser Ser Val Glu Ala Arg Gly Ser Glu  
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Gly Lys Glu Gly Ser Thr Lys Val Glu Glu Asn Ser Met Lys  
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Asp Asp Ile Asn Phe Ser Glu Asp Asp Val Glu Ala Val Asn  
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Pro Pro Lys Glu Asp Ser His Pro Asp Leu Pro Gly Thr Glu  
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Ser Leu Pro Pro Ser Arg Arg Asn Ser Asn Ser Asn Pro Pro  
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Thr Ser Thr Cys Thr Asn Ser Thr Arg Glu Ser Asn Ser Ser  
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Ser Thr Arg Glu Ser Asn Ser Ser His Thr Cys Met Pro Leu  
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Gly Glu Asp Asp Ile Asn Phe Ser Glu Asp Asp Val Glu Ala  
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Ile Ser Leu Ala His Gly Ile Ile Arg Ser Thr Val Leu Val Ile Phe  
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Tyr Ser Val Val Phe  
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<400> 103

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Trp Ser Pro Gly Ser Ala Cys Gly Leu Gly Phe Val Pro Val Val Tyr  
 20 25 30

Tyr Ser Leu Leu Leu Cys Leu Gly Leu Pro Ala Asn Ile Leu Thr Val  
 35 40 45

Ile Ile Leu Ser Gln Leu Val Ala Arg Arg Gln Lys Ser Ser Tyr Asn  
 50 55 60

Tyr Leu Leu Ala Leu Ala Ala Ala Asp Ile Leu Val Leu Phe Phe Ile  
 65 70 75 80

Val Phe Val Asp Phe Leu Leu Glu Asp Phe Ile Leu Asn Met Gln Met  
 85 90 95

Pro Gln Val Pro Asp Lys Ile Ile Glu Val Leu Glu Phe Ser Ser Ile  
 100 105 110

His Thr Ser Ile Trp Ile Thr Val Pro Leu Thr Ile Asp Arg Tyr Ile  
 115 120 125

Ala Val Cys His Pro Leu Lys Tyr His Thr Val Ser Tyr Pro Ala Arg  
 130 135 140

Thr Arg Lys Val Ile Val Ser Val Tyr Ile Thr Cys Phe Leu Thr Ser  
 145 150 155 160

Ile Pro Tyr Tyr Trp Trp Pro Asn Ile Trp Thr Glu Asp Tyr Ile Ser  
 165 170 175

Thr Ser Val His His Val Leu Ile Trp Ile His Cys Phe Thr Val Tyr  
 180 185 190

Leu Val Pro Cys Ser Ile Phe Phe Ile Leu Asn Ser Ile Ile Val Tyr  
 195 200 205

Lys Leu Arg Arg Lys Ser Asn Phe Arg Leu Arg Gly Tyr Ser Thr Gly  
 210 215 220

Lys Thr Thr Ala Ile Leu Phe Thr Ile Thr Ser Ile Phe Ala Thr Leu  
 225 230 235 240

Trp Ala Pro Arg Ile Ile Met Ile Leu Tyr His Leu Tyr Gly Ala Pro  
 245 250 255

Ile Gln Asn Arg Trp Leu Val His Ile Met Ser Asp Ile Ala Asn Met  
 260 265 270

Leu Ala Leu Leu Asn Thr Ala Ile Asn Phe Phe Leu Tyr Cys Phe Ile  
 275 280 285

Ser Lys Arg Phe Arg Thr Met Ala Ala Ala Thr Leu Lys Ala Phe Phe  
 290 295 300

Lys Cys Gln Lys Gln Pro Val Gln Phe Tyr Thr Asn His Asn Phe Ser  
 305 310 315 320

Ile Thr Ser Ser Pro Trp Ile Ser Pro Ala Asn Ser His Cys Ile Lys  
325 330 335

Met Leu Val Tyr Gln Tyr Asp Lys Asn Gly Lys Pro Ile Lys Ser Arg  
340 345 350

Asn Asp Ser Lys Ser Ser Tyr Gln Phe Glu Asp Ala Ile Gly Ala Cys  
355 360 365

Val Ile Ile Leu  
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20 25 30

Ala Gln Lys Phe Thr Gly Gly Ile Gly Asn Lys Leu Cys Ala Leu Leu  
35 40 45

Tyr Gly Asp Ala Glu Lys Pro Ala Glu Ser Gly Gly Ser Gln Pro Pro  
50 55 60

Arg Ala Ala Ala Arg Lys Ala Ala Cys Ala Cys Asp Gln Lys Pro Cys  
65 70 75 80

Ser Cys Ser Lys Val Asp Val Asn Tyr Ala Phe Leu His Ala Thr Asp  
85 90 95

Leu Leu Pro Ala Cys Asp Gly Glu Arg Pro Thr Leu Ala Phe Leu Gln  
100 105 110

Asp Val Met Asn Ile Leu Leu Gln Tyr Val Val Lys Ser Phe Asp Arg  
115 120 125

Ser Thr Lys Val Ile Asp Phe His Tyr Pro Asn Glu Leu Leu Gln Glu

130		135		140
Tyr Asn Trp Glu Leu Ala Asp Gln Pro Gln Asn Leu Glu Glu Ile Leu				
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Met His Cys Gln Thr Thr Leu Lys Tyr Ala Ile Lys Thr Gly His Pro				
	165		170	175
Arg Tyr Phe Asn Gln Leu Ser Thr Gly Leu Asp Met Val Gly Leu Ala				
	180		185	190
Ala Asp Trp Leu Thr Ser Thr Ala Asn Thr Asn Met Phe Thr Tyr Glu				
	195		200	205
Ile Ala Pro Val Phe Val Leu Leu Glu Tyr Val Thr Leu Lys Lys Met				
	210		215	220
Arg Glu Ile Ile Gly Trp Pro Gly Gly Ser Gly Asp Gly Ile Phe Ser				
	225		230	235 240
Pro Gly Gly Ala Ile Ser Asn Met Tyr Ala Met Met Ile Ala Arg Phe				
	245		250	255
Lys Met Phe Pro Glu Val Lys Glu Lys Gly Met Ala Ala Leu Pro Arg				
	260		265	270
Leu Ile Ala Phe Thr Ser Glu His Ser His Phe Ser Leu Lys Lys Gly				
	275		280	285
Ala Ala Ala Leu Gly Ile Gly Thr Asp Ser Val Ile Leu Ile Lys Cys				
	290		295	300
Asp Glu Arg Gly Lys Met Ile Pro Ser Asp Leu Glu Arg Arg Ile Leu				
	305		310	315 320
Glu Ala Lys Gln Lys Gly Phe Val Pro Phe Leu Val Ser Ala Thr Ala				
	325		330	335
Gly Thr Thr Val Tyr Gly Ala Phe Asp Pro Leu Leu Ala Val Ala Asp				
	340		345	350
Ile Cys Lys Lys Tyr Lys Ile Trp Met His Val Asp Ala Ala Trp Gly				
	355		360	365



Gly Gly Leu Leu Met Ser Arg Lys His Lys Trp Lys Leu Ser Gly Val  
 370 375 380

Glu Arg Ala Asn Ser Val Thr Trp Asn Pro His Lys Met Met Gly Val  
 385 390 395 400

Pro Leu Gln Cys Ser Ala Leu Leu Val Arg Glu Glu Gly Leu Met Gln  
 405 410 415

Asn Cys Asn Gln Met His Ala Ser Tyr Leu Phe Gln Gln Asp Lys His  
 420 425 430

Tyr Asp Leu Ser Tyr Asp Thr Gly Asp Lys Ala Leu Gln Cys Gly Arg  
 435 440 445

His Val Asp Val Phe Lys Leu Trp Leu Met Trp Arg Ala Lys Gly Thr  
 450 455 460

Thr Gly Phe Glu Ala His Val Asp Lys Cys Leu Glu Leu Ala Glu Tyr  
 465 470 475 480

Leu Tyr Asn Ile Ile Lys Asn Arg Glu Gly Tyr Glu Met Val Phe Asp  
 485 490 495

Gly Lys Pro Gln His Thr Asn Val Cys Phe Trp Tyr Ile Pro Pro Ser  
 500 505 510

Leu Arg Thr Leu Glu Asp Asn Glu Glu Arg Met Ser Arg Leu Ser Lys  
 515 520 525

Val Ala Pro Val Ile Lys Ala Arg Met Met Glu Tyr Gly Thr Thr Met  
 530 535 540

Val Ser Tyr Gln Pro Leu Gly Asp Lys Val Asn Phe Phe Arg Met Val  
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Ile Ser Asn Pro Ala Ala Thr His Gln Asp Ile Asp Phe Leu Ile Glu  
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Glu Ile Glu Arg Leu Gly Gln Asp Leu  
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Phe Cys

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 aagctcgtcc gggggaggaa gcccctttcc ctggttggtga ttctgggtct ggccgtgggc 420  
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